

SEQUENCE LISTING

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<110> Wonderling, Ramani S.
      Boroughs, Karen L.

<120> CANINE AND FELINE PROTEINS, NUCLEIC ACID MOLECULES AND USES
      THEREOF

<130> IM-5

<140> 09/917,265
<141> 2001-07-27

<150> 60/223,016
<151> 2000-08-04

<160> 111

<170> PatentIn version 3.2

<210> 1
<211> 514
<212> DNA
<213> Felis catus

<220>
<221> CDS
<222> (114)..(512)

<220>
<221> misc_feature
<222> (470)..(470)
<223> n = unknown at position 470
Xaa = unknown at position 119

<400> 1
gctaaaggcg ctcttgccac cttctgccat ctacacagct caggaaaaga aaggggacctc      60
aaaccttcca gatcccttcc tctcttagga aactattgag cacagggata aag atg      116
                                         Met
                                         1

act gct ata cca gta gat gat tgc atc aac ttt gtg gga atg aaa ttt      164
Thr Ala Ile Pro Val Asp Asp Cys Ile Asn Phe Val Gly Met Lys Phe
          5                      10                      15

att gac aat aca ctt tac ttt gta gct gac agt gat gaa aac ctg gaa      212
Ile Asp Asn Thr Leu Tyr Phe Val Ala Asp Ser Asp Glu Asn Leu Glu
          20                      25                      30

aca gat tac ttt ggc aag ctt gaa cat aaa ctc tca atc tta cga aac      260
Thr Asp Tyr Phe Gly Lys Leu Glu His Lys Leu Ser Ile Leu Arg Asn
          35                      40                      45

ttg aac gac caa gtt ctc ttc att aac cag gga gat caa cct gtg ttt      308
Leu Asn Asp Gln Val Leu Phe Ile Asn Gln Gly Asp Gln Pro Val Phe

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| 50 | 55 | 60 | 65 | |
|---|-----|-----|-----|-----|
| gag gat atg cct gat tct gac tgt aca gat aat gca ccc cgg act gaa | | | | 356 |
| Glu Asp Met Pro Asp Ser Asp Cys Thr Asp Asn Ala Pro Arg Thr Glu | | | | |
| | 70 | 75 | 80 | |
| ttt atc ata tat atg tat aaa gat agc ctc act aga ggt ctg gca gta | | | | 404 |
| Phe Ile Ile Tyr Met Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala Val | | | | |
| | 85 | 90 | 95 | |
| acc atc tct gtg aat tat aag acc atg tct act ctc tcc tgt gag aac | | | | 452 |
| Thr Ile Ser Val Asn Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu Asn | | | | |
| | 100 | 105 | 110 | |
| aaa att att tcc ttt aan gga atg agt cct cct gag agt atc aat gat | | | | 500 |
| Lys Ile Ile Ser Phe Xaa Gly Met Ser Pro Pro Glu Ser Ile Asn Asp | | | | |
| | 115 | 120 | 125 | |
| gaa gga aat gac at | | | | 514 |
| Glu Gly Asn Asp | | | | |
| 130 | | | | |

<210> 2
 <211> 133
 <212> PRT
 <213> Felis catus

 <220>
 <221> misc_feature
 <222> (119)..(119)
 <223> The 'Xaa' at location 119 stands for Lys, or Asn.

 <400> 2

| | | | | |
|---|----|----|----|--|
| Met Thr Ala Ile Pro Val Asp Asp Cys Ile Asn Phe Val Gly Met Lys | | | | |
| 1 | 5 | 10 | 15 | |
| Phe Ile Asp Asn Thr Leu Tyr Phe Val Ala Asp Ser Asp Glu Asn Leu | | | | |
| | 20 | 25 | 30 | |
| Glu Thr Asp Tyr Phe Gly Lys Leu Glu His Lys Leu Ser Ile Leu Arg | | | | |
| | 35 | 40 | 45 | |
| Asn Leu Asn Asp Gln Val Leu Phe Ile Asn Gln Gly Asp Gln Pro Val | | | | |
| | 50 | 55 | 60 | |
| Phe Glu Asp Met Pro Asp Ser Asp Cys Thr Asp Asn Ala Pro Arg Thr | | | | |
| 65 | 70 | 75 | 80 | |
| Glu Phe Ile Ile Tyr Met Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala | | | | |
| | 85 | 90 | 95 | |

Val Thr Ile Ser Val Asn Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu
100 105 110

Asn Lys Ile Ile Ser Phe Xaa Gly Met Ser Pro Pro Glu Ser Ile Asn
115 120 125

Asp Glu Gly Asn Asp
130

<210> 3
<211> 514
<212> DNA
<213> Felis catus

<220>
<221> misc_feature
<222> (45)..(45)
<223> n = unknown at position 45

<400> 3
atgtcatttc cttcatcatt gatactctca ggaggactca ttccnttaaa ggaaataatt 60
ttgtttctcac aggagagagt agacatgggc ttataattca cagagatggg tactgccaga 120
cctctagtga ggctatcttt atacatatat atgataaatt cagtccgggg tgcattatct 180
gtacagtcag aatcagggcat atcctcaaac acaggttgat ctccctgggt aatgaagaga 240
acttgggtcgt tcaagtttcg taagattgag agtttatggt caagcttgcc aaagtaatct 300
gtttccagggt tttcatcact gtcagctaca aagtaaagtg tattgtcaat aaatttcatt 360
cccacaaagt tgatgcaatc atctactggg atagcagtca tctttatccc tgtgctcaat 420
agtttcctaa gagaggaagg gatctggaag gtttgaggtc cctttctttt cctgagctgt 480
gtagatggca gaagggtggca ggagcgcctt tagc 514

<210> 4
<211> 502
<212> DNA
<213> Felis catus

<220>
<221> CDS
<222> (3)..(464)
<220>
<221> misc_feature

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<222> (126)..(126)
<223> n = unknown at position 126
Xaa = unknown at position 42

<400> 4
gc aag ctt gaa cat aaa ctc tca atc tta cga aac ttg aac gac caa      47
  Lys Leu Glu His Lys Leu Ser Ile Leu Arg Asn Leu Asn Asp Gln
    1             5             10             15

gtt ctc ttc att aac cag gga gat caa cct gtg ttt gag gat atg cct      95
Val Leu Phe Ile Asn Gln Gly Asp Gln Pro Val Phe Glu Asp Met Pro
    20             25             30

gat tct gac tgt aca gat aat gca ccc cgg nct gaa ttt atc ata tat      143
Asp Ser Asp Cys Thr Asp Asn Ala Pro Arg Xaa Glu Phe Ile Ile Tyr
    35             40             45

atg tat aaa gat agc ctc act aga ggt ctg gca gta acc atc tct gtg      191
Met Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala Val Thr Ile Ser Val
    50             55             60

aat tat aag acc atg tct act ctc tcc tgt gag aac aaa att att tcc      239
Asn Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu Asn Lys Ile Ile Ser
    65             70             75

ttt aag gaa atg agt cct cct gag agt atc aat gat gaa gga aat gac      287
Phe Lys Glu Met Ser Pro Pro Glu Ser Ile Asn Asp Glu Gly Asn Asp
    80             85             90             95

atc ata ttc ttt cag aga agt gtt cca gga cat gat gat aag ata caa      335
Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asp Lys Ile Gln
    100            105            110

ttt gag tct tca ttg tac aag ggg tac ttt cta gct tgt gaa aaa gag      383
Phe Glu Ser Ser Leu Tyr Lys Gly Tyr Phe Leu Ala Cys Glu Lys Glu
    115            120            125

aaa gat ctt ttc aaa ctc att ttg aaa aaa aag gat gaa aat ggg gat      431
Lys Asp Leu Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu Asn Gly Asp
    130            135            140

aag tcc ata atg ttc act gtt caa aac aag aat tagatattaa aattgcataa      484
Lys Ser Ile Met Phe Thr Val Gln Asn Lys Asn
    145            150

tttgaaaaaa aaaaaaaa      502

<210> 5
<211> 154
<212> PRT
<213> Felis catus

<220>
<221> misc_feature
<222> (42)..(42)
<223> The 'Xaa' at location 42 stands for Thr, Ala, Pro, or Ser.

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<400> 5

Lys Leu Glu His Lys Leu Ser Ile Leu Arg Asn Leu Asn Asp Gln Val
1 5 10 15

Leu Phe Ile Asn Gln Gly Asp Gln Pro Val Phe Glu Asp Met Pro Asp
20 25 30

Ser Asp Cys Thr Asp Asn Ala Pro Arg Xaa Glu Phe Ile Ile Tyr Met
35 40 45

Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala Val Thr Ile Ser Val Asn
50 55 60

Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu Asn Lys Ile Ile Ser Phe
65 70 75 80

Lys Glu Met Ser Pro Pro Glu Ser Ile Asn Asp Glu Gly Asn Asp Ile
85 90 95

Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asp Lys Ile Gln Phe
100 105 110

Glu Ser Ser Leu Tyr Lys Gly Tyr Phe Leu Ala Cys Glu Lys Glu Lys
115 120 125

Asp Leu Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu Asn Gly Asp Lys
130 135 140

Ser Ile Met Phe Thr Val Gln Asn Lys Asn
145 150

<210> 6

<211> 502

<212> DNA

<213> Felis catus

<220>

<221> misc_feature

<222> (377)..(377)

<223> n = unknown at position 377

<400> 6

tttttttttt ttttcaaatt atgcaatttt aatatctaatt tcttgttttg aacagtgaac

60

| | |
|--|-----|
| attatggact tatccccatt ttcattccttt tttttcaaaa tgagtttgaa aagatctttc | 120 |
| tctttttcac aagctagaaa gtacccttg tacaatgaag actcaaattg tatcttatca | 180 |
| tcatgtcctg gaacacttct ctgaaagaat atgatgtcat ttccttcac attgatactc | 240 |
| tcaggaggac tcatttcctt aaaggaaata attttggttct cacaggagag agtagacatg | 300 |
| gtcttataat tcacagagat gggtactgcc agacctctag tgaggctatc tttatacata | 360 |
| tatatgataa attcagnccg ggggtgcatta tctgtacagt cagaatcagg catatcctca | 420 |
| aacacaggtt gatctccctg gttaatgaag agaacttggc cgttcaagtt tcgtaagatt | 480 |
| gagagtttat gttcaagctt gc | 502 |

<210> 7
 <211> 607
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (24)..(599)

| | |
|--|-----|
| <400> 7 aactattgag cacagggata aag atg act gct ata cca gta gat gat tgc atc <div style="text-align: center;"> Met Thr Ala Ile Pro Val Asp Asp Cys Ile 1 5 10 </div> | 53 |
| aac ttt gtg gga atg aaa ttt att gac aat aca ctt tac ttt gta gct Asn Phe Val Gly Met Lys Phe Ile Asp Asn Thr Leu Tyr Phe Val Ala <div style="text-align: center;"> 15 20 25 </div> | 101 |
| gac agt gat gaa aac ctg gaa aca gat tac ttt ggc aag ctt gaa cat Asp Ser Asp Glu Asn Leu Glu Thr Asp Tyr Phe Gly Lys Leu Glu His <div style="text-align: center;"> 30 35 40 </div> | 149 |
| aaa ctc tca atc tta cga aac ttg aac gac caa gtt ctc ttc att aac Lys Leu Ser Ile Leu Arg Asn Leu Asn Asp Gln Val Leu Phe Ile Asn <div style="text-align: center;"> 45 50 55 </div> | 197 |
| cag gga gat caa cct gtg ttt gag gat atg cct gat tct gac tgt aca Gln Gly Asp Gln Pro Val Phe Glu Asp Met Pro Asp Ser Asp Cys Thr <div style="text-align: center;"> 60 65 70 </div> | 245 |
| gat aat gca ccc cgg act gaa ttt atc ata tat atg tat aaa gat agc Asp Asn Ala Pro Arg Thr Glu Phe Ile Ile Tyr Met Tyr Lys Asp Ser <div style="text-align: center;"> 75 80 85 90 </div> | 293 |
| ctc act aga ggt ctg gca gta acc atc tct gtg aat tat aag acc atg Leu Thr Arg Gly Leu Ala Val Thr Ile Ser Val Asn Tyr Lys Thr Met <div style="text-align: center;"> 95 100 105 </div> | 341 |
| tct act ctc tcc tgt gag aac aaa att att tcc ttt aag gaa atg agt | 389 |

| | |
|---|-----|
| Ser Thr Leu Ser Cys Glu Asn Lys Ile Ile Ser Phe Lys Glu Met Ser | |
| 110 115 120 | |
| cct cct gag agt atc aat gat gaa gga aat gac atc ata ttc ttt cag | 437 |
| Pro Pro Glu Ser Ile Asn Asp Glu Gly Asn Asp Ile Ile Phe Phe Gln | |
| 125 130 135 | |
| aga agt gtt cca gga cat gat gat aag ata caa ttt gag tct tca ttg | 485 |
| Arg Ser Val Pro Gly His Asp Asp Lys Ile Gln Phe Glu Ser Ser Leu | |
| 140 145 150 | |
| tac aag ggg tac ttt cta gct tgt gaa aaa gag aaa gat ctt ttc aaa | 533 |
| Tyr Lys Gly Tyr Phe Leu Ala Cys Glu Lys Glu Lys Asp Leu Phe Lys | |
| 155 160 165 170 | |
| ctc att ttg aaa aaa aag gat gaa aat ggg gat aag tcc ata atg ttc | 581 |
| Leu Ile Leu Lys Lys Lys Asp Glu Asn Gly Asp Lys Ser Ile Met Phe | |
| 175 180 185 | |
| act gtt caa aac aag aat tagatatt | 607 |
| Thr Val Gln Asn Lys Asn | |
| 190 | |
| <210> 8 | |
| <211> 192 | |
| <212> PRT | |
| <213> Felis catus | |
| <400> 8 | |
| Met Thr Ala Ile Pro Val Asp Asp Cys Ile Asn Phe Val Gly Met Lys | |
| 1 5 10 15 | |
| Phe Ile Asp Asn Thr Leu Tyr Phe Val Ala Asp Ser Asp Glu Asn Leu | |
| 20 25 30 | |
| Glu Thr Asp Tyr Phe Gly Lys Leu Glu His Lys Leu Ser Ile Leu Arg | |
| 35 40 45 | |
| Asn Leu Asn Asp Gln Val Leu Phe Ile Asn Gln Gly Asp Gln Pro Val | |
| 50 55 60 | |
| Phe Glu Asp Met Pro Asp Ser Asp Cys Thr Asp Asn Ala Pro Arg Thr | |
| 65 70 75 80 | |
| Glu Phe Ile Ile Tyr Met Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala | |
| 85 90 95 | |
| Val Thr Ile Ser Val Asn Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu | |
| 100 105 110 | |

Asn Lys Ile Ile Ser Phe Lys Glu Met Ser Pro Pro Glu Ser Ile Asn
115 120 125

Asp Glu Gly Asn Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His
130 135 140

Asp Asp Lys Ile Gln Phe Glu Ser Ser Leu Tyr Lys Gly Tyr Phe Leu
145 150 155 160

Ala Cys Glu Lys Glu Lys Asp Leu Phe Lys Leu Ile Leu Lys Lys Lys
165 170 175

Asp Glu Asn Gly Asp Lys Ser Ile Met Phe Thr Val Gln Asn Lys Asn
180 185 190

<210> 9
<211> 576
<212> DNA
<213> Felis catus

<400> 9
atgactgcta taccagtaga tgattgcac aactttgtgg gaatgaaatt tattgacaat 60
acactttact ttgtagctga cagtgatgaa aacctggaaa cagattactt tggcaagctt 120
gaacataaac tctcaatctt acgaaacttg aacgaccaag ttctcttcat taaccaggga 180
gatcaacctg tgtttgagga tatgcctgat tctgactgta cagataatgc accccggact 240
gaatttatca tatatatgta taaagatagc ctactagag gtctggcagt aaccatctct 300
gtgaattata agaccatgtc tactctctcc tgtgagaaca aaattatttc ctttaaggaa 360
atgagtcctc ctgagagtat caatgatgaa ggaaatgaca tcatattctt tcagagaagt 420
gttcaggac atgatgataa gatacaattt gagtcttcat tgtacaaggg gtactttcta 480
gcttgtgaaa aagagaaaga tcttttcaaa ctcatatttga aaaaaaagga tgaaaatggg 540
gataagtcca taatgttcac tgttcaaaac aagaat 576

<210> 10
<211> 607
<212> DNA
<213> Felis catus

<400> 10
aatatctaatt tcttggtttg aacagtgaac attatggact tatccccatt ttcatacctt 60


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tttttcaaaa tgagtttgaa aagatctttc tctttttcac aagctagaaa gtacccttg 120
tacaatgaag actcaaattg tatcttatca tcatgtcctg gaacacttct ctgaaagaat 180
atgatgtcat ttccttcac attgatactc tcaggaggac tcatttcctt aaaggaaata 240
attttgttct cacaggagag agtagacatg gtcttataat tcacagagat gggttactgcc 300
agacctctag tgaggctatc tttatacata tatatgataa attcagtcctg ggggtgcatta 360
tctgtacagt cagaatcagg catatcctca aacacagggt gatctccctg gttaatgaag 420
agaacttggg cgttcaagtt tcgtaagatt gagagtttat gttcaagctt gccaaagtaa 480
tctgtttcca ggttttcac actgtcagct acaaagtaaa gtgtattgtc aataaatttc 540
attcccacaa agttgatgca atcatctact ggtatagcag tcattcttat ccctgtgctc 600
aatagtt 607

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<210> 11
<211> 471
<212> DNA
<213> Felis catus

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<220>
<221> CDS
<222> (1)..(471)

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<400> 11
tac ttt ggc aag ctt gaa cat aaa ctc tca atc tta cga aac ttg aac 48
Tyr Phe Gly Lys Leu Glu His Lys Leu Ser Ile Leu Arg Asn Leu Asn
1 5 10 15

gac caa gtt ctc ttc att aac cag gga gat caa cct gtg ttt gag gat 96
Asp Gln Val Leu Phe Ile Asn Gln Gly Asp Gln Pro Val Phe Glu Asp
20 25 30

atg cct gat tct gac tgt aca gat aat gca ccc cgg act gaa ttt atc 144
Met Pro Asp Ser Asp Cys Thr Asp Asn Ala Pro Arg Thr Glu Phe Ile
35 40 45

ata tat atg tat aaa gat agc ctc act aga ggt ctg gca gta acc atc 192
Ile Tyr Met Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala Val Thr Ile
50 55 60

tct gtg aat tat aag acc atg tct act ctc tcc tgt gag aac aaa att 240
Ser Val Asn Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu Asn Lys Ile
65 70 75 80

att tcc ttt aag gaa atg agt cct cct gag agt atc aat gat gaa gga 288
Ile Ser Phe Lys Glu Met Ser Pro Pro Glu Ser Ile Asn Asp Glu Gly
85 90 95

aat gac atc ata ttc ttt cag aga agt gtt cca gga cat gat gat aag 336

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Asn Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asp Lys
100 105 110

ata caa ttt gag tct tca ttg tac aag ggg tac ttt cta gct tgt gaa 384
Ile Gln Phe Glu Ser Ser Leu Tyr Lys Gly Tyr Phe Leu Ala Cys Glu
115 120 125

aaa gag aaa gat ctt ttc aaa ctc att ttg aaa aaa aag gat gaa aat 432
Lys Glu Lys Asp Leu Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu Asn
130 135 140

ggg gat aag tcc ata atg ttc act gtt caa aac aag aat 471
Gly Asp Lys Ser Ile Met Phe Thr Val Gln Asn Lys Asn
145 150 155

<210> 12
<211> 157
<212> PRT
<213> Felis catus

<400> 12

Tyr Phe Gly Lys Leu Glu His Lys Leu Ser Ile Leu Arg Asn Leu Asn
1 5 10 15

Asp Gln Val Leu Phe Ile Asn Gln Gly Asp Gln Pro Val Phe Glu Asp
20 25 30

Met Pro Asp Ser Asp Cys Thr Asp Asn Ala Pro Arg Thr Glu Phe Ile
35 40 45

Ile Tyr Met Tyr Lys Asp Ser Leu Thr Arg Gly Leu Ala Val Thr Ile
50 55 60

Ser Val Asn Tyr Lys Thr Met Ser Thr Leu Ser Cys Glu Asn Lys Ile
65 70 75 80

Ile Ser Phe Lys Glu Met Ser Pro Pro Glu Ser Ile Asn Asp Glu Gly
85 90 95

Asn Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asp Lys
100 105 110

Ile Gln Phe Glu Ser Ser Leu Tyr Lys Gly Tyr Phe Leu Ala Cys Glu
115 120 125

Lys Glu Lys Asp Leu Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu Asn
130 135 140

Gly Asp Lys Ser Ile Met Phe Thr Val Gln Asn Lys Asn
 145 150 155

<210> 13
 <211> 471
 <212> DNA
 <213> Felis catus

<400> 13
 attccttggtt tgaacagtga acattatgga cttatcccca ttttcatcct tttttttcaa 60
 aatgagtttg aaaagatctt tctctttttc acaagctaga aagtaccctt tgtacaatga 120
 agactcaaat tgtatcttat catcatgtcc tggaacactt ctctgaaaga atatgatgtc 180
 atttccttca tcattgatac tctcaggagg actcatttcc ttaaaggaaa taattttggt 240
 ctcacaggag agagtagaca tgggtcttata attcacagag atgggtactg ccagacctct 300
 agtgaggcta tctttataca tatatatgat aaattcagtc cggggtgcat tatctgtaca 360
 gtcagaatca ggcatactct caaacacagg ttgatctccc tggttaatga agagaacttg 420
 gtcgttcaag tttcgtaaga ttgagagttt atgttcaagc ttgccaaagt a 471

<210> 14
 <211> 1233
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (1)..(1230)

<400> 14
 atg gcc gac aag gtc ctg aag gag aag agg aag cag ttc atc aac tca 48
 Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Gln Phe Ile Asn Ser
 1 5 10 15
 gtc ggc atg ggg acg gtc aac ggc ttg ctg gat gaa ctc ttt gag aaa 96
 Val Gly Met Gly Thr Val Asn Gly Leu Leu Asp Glu Leu Phe Glu Lys
 20 25 30
 aac gtg ctg aac cag gag gag atg gag aga gta aaa tgt gaa aac gct 144
 Asn Val Leu Asn Gln Glu Glu Met Glu Arg Val Lys Cys Glu Asn Ala
 35 40 45
 acc gtt atg gac aag gcc cga gct ctg atc gac agc gtc ctg cgg aaa 192
 Thr Val Met Asp Lys Ala Arg Ala Leu Ile Asp Ser Val Leu Arg Lys
 50 55 60
 ggg cca cgg gcg tgc cag atc ttt atc tgt cac atc tgt gag gaa gac 240

| | | | | | | | | | | | | | | | | |
|-----------|-----|-----|-----|-----|-----------|-----|-----|-----|-----|-----------|-----|-----|-----|-----|-----------|-----|
| Gly 65 | Pro | Arg | Ala | Cys | Gln 70 | Ile | Phe | Ile | Cys | His 75 | Ile | Cys | Glu | Glu | Asp 80 | |
| acc | cac | ctt | gca | gag | acg | ctg | ggg | ctc | tcc | tca | agc | cca | caa | tct | gga | 288 |
| Thr | His | Leu | Ala | Glu | Thr | Leu | Gly | Leu | Ser | Ser | Ser | Pro | Gln | Ser | Gly | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| aat | tct | cag | aac | acc | acg | gac | tct | gaa | gta | gcg | ttt | cct | cct | ctt | cca | 336 |
| Asn | Ser | Gln | Asn | Thr | Thr | Asp | Ser | Glu | Val | Ala | Phe | Pro | Pro | Leu | Pro | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| gcc | agc | gtg | aat | aac | atg | cct | ggg | ccg | gct | gag | cca | gaa | gaa | tct | gta | 384 |
| Ala | Ser | Val | Asn | Asn | Met | Pro | Gly | Pro | Ala | Glu | Pro | Glu | Glu | Ser | Val | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| gat | gct | ctc | aag | ctt | tgt | cct | cgt | gaa | aac | ttc | gtg | aaa | ctg | tgt | aaa | 432 |
| Asp | Ala | Leu | Lys | Leu | Cys | Pro | Arg | Glu | Asn | Phe | Val | Lys | Leu | Cys | Lys | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| cag | agg | gct | gaa | gag | atc | tac | cca | ata | aag | gag | aga | aag | gat | cgt | act | 480 |
| Gln | Arg | Ala | Glu | Glu | Ile | Tyr | Pro | Ile | Lys | Glu | Arg | Lys | Asp | Arg | Thr | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| cgt | ctg | gct | ctc | atc | ata | tgc | aat | acg | acg | ttc | gat | cat | ctt | tct | ctc | 528 |
| Arg | Leu | Ala | Leu | Ile | Ile | Cys | Asn | Thr | Thr | Phe | Asp | His | Leu | Ser | Leu | |
| | | | | 165 | | | | | | 170 | | | | 175 | | |
| agg | aag | ggg | gct | gac | ctt | gac | gtt | gca | ggg | atg | agg | agg | ctg | ctt | aca | 576 |
| Arg | Lys | Gly | Ala | Asp | Leu | Asp | Val | Ala | Gly | Met | Arg | Arg | Leu | Leu | Thr | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| gac | ctt | ggc | tac | agt | gtg | cac | ata | aaa | gag | gaa | ctc | act | gct | aag | gac | 624 |
| Asp | Leu | Gly | Tyr | Ser | Val | His | Ile | Lys | Glu | Glu | Leu | Thr | Ala | Lys | Asp | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| atg | gaa | tca | gag | ctg | agg | gca | ttt | gct | gcc | cgt | cca | gag | cac | aag | tcc | 672 |
| Met | Glu | Ser | Glu | Leu | Arg | Ala | Phe | Ala | Ala | Arg | Pro | Glu | His | Lys | Ser | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| tcg | gac | agc | aca | ttc | ctg | gtg | ttc | atg | tct | cat | ggc | atc | ctg | agt | gga | 720 |
| Ser | Asp | Ser | Thr | Phe | Leu | Val | Phe | Met | Ser | His | Gly | Ile | Leu | Ser | Gly | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| atc | tgt | ggg | acg | aag | tac | agc | gct | gaa | gga | gac | cca | gat | gta | ttg | gct | 768 |
| Ile | Cys | Gly | Thr | Lys | Tyr | Ser | Ala | Glu | Gly | Asp | Pro | Asp | Val | Leu | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| tat | gac | acc | atc | ttc | cag | att | ttc | aac | aac | cgc | aac | tgc | ctt | agt | cta | 816 |
| Tyr | Asp | Thr | Ile | Phe | Gln | Ile | Phe | Asn | Asn | Arg | Asn | Cys | Leu | Ser | Leu | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| aag | gac | aag | ccc | aag | gtc | atc | atc | gtc | cag | gcc | tgc | aga | ggg | gaa | aat | 864 |
| Lys | Asp | Lys | Pro | Lys | Val | Ile | Ile | Val | Gln | Ala | Cys | Arg | Gly | Glu | Asn | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| ttg | ggg | gaa | ctg | ttg | atc | agt | gac | tct | cca | gcg | gcc | cca | atg | gac | agc | 912 |
| Leu | Gly | Glu | Leu | Leu | Ile | Ser | Asp | Ser | Pro | Ala | Ala | Pro | Met | Asp | Ser | |

| 290 | 295 | 300 | |
|---|-----|-----|------|
| act tca cag atg ggt agc agc ctt tca cag gtg ggt gac aac cta gag | | | 960 |
| Thr Ser Gln Met Gly Ser Ser Leu Ser Gln Val Gly Asp Asn Leu Glu | | | |
| 305 | 310 | 315 | 320 |
| gac gac gcc att tac aag gtc cac gtg gag aag gac ttc atc gct ttc | | | 1008 |
| Asp Asp Ala Ile Tyr Lys Val His Val Glu Lys Asp Phe Ile Ala Phe | | | |
| | 325 | 330 | 335 |
| tgc tcc tcg acc cca cat cat gtg tct tgg aga gac gtg aac aag gga | | | 1056 |
| Cys Ser Ser Thr Pro His His Val Ser Trp Arg Asp Val Asn Lys Gly | | | |
| | 340 | 345 | 350 |
| tct ctc ttc att aca caa ctc atc acg tgc ttc caa aag tat tcg tgg | | | 1104 |
| Ser Leu Phe Ile Thr Gln Leu Ile Thr Cys Phe Gln Lys Tyr Ser Trp | | | |
| | 355 | 360 | 365 |
| tgc ttt cat ctg gag gaa gta ttt cgg aag gta caa cag tca ttt gaa | | | 1152 |
| Cys Phe His Leu Glu Glu Val Phe Arg Lys Val Gln Gln Ser Phe Glu | | | |
| | 370 | 375 | 380 |
| aaa cca aat gtt aga gcc cag atg ccc acc att gaa cga cta tcc atg | | | 1200 |
| Lys Pro Asn Val Arg Ala Gln Met Pro Thr Ile Glu Arg Leu Ser Met | | | |
| 385 | 390 | 395 | 400 |
| aca aga tgt ttc tac ctc ttc cca gga cat taa | | | 1233 |
| Thr Arg Cys Phe Tyr Leu Phe Pro Gly His | | | |
| | 405 | 410 | |
| <210> 15 | | | |
| <211> 410 | | | |
| <212> PRT | | | |
| <213> Felis catus | | | |
| <400> 15 | | | |
| Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Gln Phe Ile Asn Ser | | | |
| 1 | 5 | 10 | 15 |
| Val Gly Met Gly Thr Val Asn Gly Leu Leu Asp Glu Leu Phe Glu Lys | | | |
| | 20 | 25 | 30 |
| Asn Val Leu Asn Gln Glu Glu Met Glu Arg Val Lys Cys Glu Asn Ala | | | |
| | 35 | 40 | 45 |
| Thr Val Met Asp Lys Ala Arg Ala Leu Ile Asp Ser Val Leu Arg Lys | | | |
| | 50 | 55 | 60 |
| Gly Pro Arg Ala Cys Gln Ile Phe Ile Cys His Ile Cys Glu Glu Asp | | | |
| 65 | 70 | 75 | 80 |

Thr His Leu Ala Glu Thr Leu Gly Leu Ser Ser Ser Pro Gln Ser Gly
 85 90 95

Asn Ser Gln Asn Thr Thr Asp Ser Glu Val Ala Phe Pro Pro Leu Pro
 100 105 110

Ala Ser Val Asn Asn Met Pro Gly Pro Ala Glu Pro Glu Glu Ser Val
 115 120 125

Asp Ala Leu Lys Leu Cys Pro Arg Glu Asn Phe Val Lys Leu Cys Lys
 130 135 140

Gln Arg Ala Glu Glu Ile Tyr Pro Ile Lys Glu Arg Lys Asp Arg Thr
 145 150 155 160

Arg Leu Ala Leu Ile Ile Cys Asn Thr Thr Phe Asp His Leu Ser Leu
 165 170 175

Arg Lys Gly Ala Asp Leu Asp Val Ala Gly Met Arg Arg Leu Leu Thr
 180 185 190

Asp Leu Gly Tyr Ser Val His Ile Lys Glu Glu Leu Thr Ala Lys Asp
 195 200 205

Met Glu Ser Glu Leu Arg Ala Phe Ala Ala Arg Pro Glu His Lys Ser
 210 215 220

Ser Asp Ser Thr Phe Leu Val Phe Met Ser His Gly Ile Leu Ser Gly
 225 230 235 240

Ile Cys Gly Thr Lys Tyr Ser Ala Glu Gly Asp Pro Asp Val Leu Ala
 245 250 255

Tyr Asp Thr Ile Phe Gln Ile Phe Asn Asn Arg Asn Cys Leu Ser Leu
 260 265 270

Lys Asp Lys Pro Lys Val Ile Ile Val Gln Ala Cys Arg Gly Glu Asn
 275 280 285

Leu Gly Glu Leu Leu Ile Ser Asp Ser Pro Ala Ala Pro Met Asp Ser
 290 295 300

Thr Ser Gln Met Gly Ser Ser Leu Ser Gln Val Gly Asp Asn Leu Glu
 305 310 315 320

Asp Asp Ala Ile Tyr Lys Val His Val Glu Lys Asp Phe Ile Ala Phe
 325 330 335

Cys Ser Ser Thr Pro His His Val Ser Trp Arg Asp Val Asn Lys Gly
 340 345 350

Ser Leu Phe Ile Thr Gln Leu Ile Thr Cys Phe Gln Lys Tyr Ser Trp
 355 360 365

Cys Phe His Leu Glu Glu Val Phe Arg Lys Val Gln Gln Ser Phe Glu
 370 375 380

Lys Pro Asn Val Arg Ala Gln Met Pro Thr Ile Glu Arg Leu Ser Met
 385 390 395 400

Thr Arg Cys Phe Tyr Leu Phe Pro Gly His
 405 410

<210> 16
 <211> 1233
 <212> DNA
 <213> Felis catus

<400> 16
 ttaatgtcct gggaagaggt agaaacatct tgtcatggat agtcgttcaa tgggtgggcat 60
 ctgggctcta acatttggtt tttcaaata ctgttgtacc ttccgaaata cttcctccag 120
 atgaaagcac cacgaatact tttggaagca cgtgatgagt tgtgtaatga agagagatcc 180
 cttgttcacg tctctccaag acacatgatg tggggctcag gagcagaaag cgatgaagtc 240
 cttctccacg tggaccttgt aaatggcgct gtcctctagg ttgtcaccca cctgtgaaag 300
 gctgctaccc atctgtgaag tgctgtccat tggggccgct ggagagtcac tgatcaacag 360
 ttccccaaa ttttcacctc tgcaggcctg gacgatgatg accttgggct tgtcctttag 420
 actaaggcag ttgcggttgt tgaaaatctg gaagatgggtg tcataagcca atacatctgg 480
 gtctccttca gcgctgtact tcgtcccaca gattccactc aggatgccat gagacatgaa 540
 caccaggaat gtgctgtccg aggacttgtg ctctggacgg gcagcaaag ccctcagctc 600
 tgattccatg tccttagcag tgagttcctc ttttatgtgc aactgtagc caaggtctgt 660
 aagcagctc ctcacccctg caacgtcaag gtcagccccc ttctgagag aaagatgatc 720

```

gaacgtcgta ttgcatatga tgagagccag acgagtacga tcctttctct cctttattgg      780
gtagatctct tcagccctct gtttacacag tttcacgaag ttttcacgag gacaaagctt      840
gagagcatct acagattctt ctggctcagc cggcccaggc atgttattca cgctggctgg      900
aagaggagga aacgctactt cagagtcctg ggtgttctga gaatttccag attgtgggct      960
tgaggagagc cccagcgtct ctgcaagggtg ggtgtcttcc tcacagatgt gacagataaa    1020
gatctggcac gcccgtaggc ctttccgcag gacgctgtcg atcagagctc gggccttgtc    1080
cataacggta gcgttttcac attttactct ctccatctcc tcttggttca gcacgttttt    1140
ctcaaagagt tcattccagca agccgttgac cgtcccatg ccgactgagt tgatgaactg    1200
cttcctcttc tccttcagga ccttgtcggc cat                                  1233

```

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<210> 17
<211> 526
<212> DNA
<213> Felis catus

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<220>
<221> CDS
<222> (18)..(524)

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<400> 17
ggcacgagca aaaagcc atg gcc gac aag gat ctg aag ggc aag agg aag      50
           Met Ala Asp Lys Asp Leu Lys Gly Lys Arg Lys
           1             5             10

cag ttc atc aac tca gtc ggc atg ggg acg gtc aac ggc ttg ctg gat      98
Gln Phe Ile Asn Ser Val Gly Met Gly Thr Val Asn Gly Leu Leu Asp
           15             20             25

gaa ctc ttt gag aaa aac gtg ctg aac cag gag gag atg gag aga gta      146
Glu Leu Phe Glu Lys Asn Val Leu Asn Gln Glu Glu Met Glu Arg Val
           30             35             40

aaa tgt gaa aac gct acc gtt atg gac aag gcc cga gct ctg atc gac      194
Lys Cys Glu Asn Ala Thr Val Met Asp Lys Ala Arg Ala Leu Ile Asp
           45             50             55

agc gtc ctg cgg aaa ggg cca cgg gcg tgc cag atc ttt atc tgt cac      242
Ser Val Leu Arg Lys Gly Pro Arg Ala Cys Gln Ile Phe Ile Cys His
           60             65             70             75

atc tgt gag gaa gac acc cac ctt gca gag acg ctg ggg ctc tcc tca      290
Ile Cys Glu Glu Asp Thr His Leu Ala Glu Thr Leu Gly Leu Ser Ser
           80             85             90

agc cca caa tct gga aat tct cag aac acc acg gac tct gaa gta gcg      338
Ser Pro Gln Ser Gly Asn Ser Gln Asn Thr Thr Asp Ser Glu Val Ala

```


| | 95 | 100 | 105 | |
|---|-----|-----|-----|-----|
| ttt cct cct ctt cca gcc agc gtg aat aac atg cct ggg ccg gct gag | | | | 386 |
| Phe Pro Pro Leu Pro Ala Ser Val Asn Asn Met Pro Gly Pro Ala Glu | | | | |
| | 110 | 115 | 120 | |
| cca gaa gaa tct gta gat gct ctc aag ctt tgt cct cgt gaa aac ttc | | | | 434 |
| Pro Glu Glu Ser Val Asp Ala Leu Lys Leu Cys Pro Arg Glu Asn Phe | | | | |
| | 125 | 130 | 135 | |
| gtg aaa ctg tgt aaa cag agg gct gaa gag atc tac cca ata aag gag | | | | 482 |
| Val Lys Leu Cys Lys Gln Arg Ala Glu Glu Ile Tyr Pro Ile Lys Glu | | | | |
| | 140 | 145 | 150 | 155 |
| aga aag gat cgt act cgt ctg gct ctc atc ata tgc aat acg ac | | | | 526 |
| Arg Lys Asp Arg Thr Arg Leu Ala Leu Ile Ile Cys Asn Thr | | | | |
| | 160 | 165 | | |
| | | | | |
| <210> 18 | | | | |
| <211> 169 | | | | |
| <212> PRT | | | | |
| <213> Felis catus | | | | |
| | | | | |
| <400> 18 | | | | |
| Met Ala Asp Lys Asp Leu Lys Gly Lys Arg Lys Gln Phe Ile Asn Ser | | | | |
| 1 5 10 15 | | | | |
| Val Gly Met Gly Thr Val Asn Gly Leu Leu Asp Glu Leu Phe Glu Lys | | | | |
| 20 25 30 | | | | |
| Asn Val Leu Asn Gln Glu Glu Met Glu Arg Val Lys Cys Glu Asn Ala | | | | |
| 35 40 45 | | | | |
| Thr Val Met Asp Lys Ala Arg Ala Leu Ile Asp Ser Val Leu Arg Lys | | | | |
| 50 55 60 | | | | |
| Gly Pro Arg Ala Cys Gln Ile Phe Ile Cys His Ile Cys Glu Glu Asp | | | | |
| 65 70 75 80 | | | | |
| Thr His Leu Ala Glu Thr Leu Gly Leu Ser Ser Ser Pro Gln Ser Gly | | | | |
| 85 90 95 | | | | |
| Asn Ser Gln Asn Thr Thr Asp Ser Glu Val Ala Phe Pro Pro Leu Pro | | | | |
| 100 105 110 | | | | |
| Ala Ser Val Asn Asn Met Pro Gly Pro Ala Glu Pro Glu Glu Ser Val | | | | |
| 115 120 125 | | | | |

Asp Ala Leu Lys Leu Cys Pro Arg Glu Asn Phe Val Lys Leu Cys Lys
 130 135 140

Gln Arg Ala Glu Glu Ile Tyr Pro Ile Lys Glu Arg Lys Asp Arg Thr
 145 150 155 160

Arg Leu Ala Leu Ile Ile Cys Asn Thr
 165

<210> 19
 <211> 526
 <212> DNA
 <213> Felis catus

<400> 19
 gtcgtattgc atatgatgag agccagacga gtacgatcct ttctctcctt tattgggtag 60
 atctcttcag ccctctgttt acacagtttc acgaagtttt cacgaggaca aagcttgaga 120
 gcatctacag attcttctgg ctacagccggc ccaggcatgt tattcacgct ggctggaaga 180
 ggaggaaacg ctacttcaga gtccgtggtg ttctgagaat ttccagattg tgggcttgag 240
 gagagcccca gcgtctctgc aagggtgggtg tcttcctcac agatgtgaca gataaagatc 300
 tggcacgccc gtggcccttt ccgcaggacg ctgtcgatca gagctcgggc cttgtccata 360
 acggtagcgt tttcacattt tactctctcc atctcctcct gggttcagcac gtttttctca 420
 aagagttcat ccagcaagcc gttgaccgtc cccatgccga ctgagttgat gaactgcttc 480
 ctcttgccct tcagatcctt gtcggccatg gctttttgct cgtgcc 526

<210> 20
 <211> 500
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (3)..(362)

<220>
 <221> misc_feature
 <222> (473)..(473)
 <223> n = unknown at position 473

<400> 20
 gg gaa ctg ttg atc agt gac tct cca gcg gcc cca atg gac agc act 47
 Glu Leu Leu Ile Ser Asp Ser Pro Ala Ala Pro Met Asp Ser Thr
 1 5 10 15

| | |
|--|-----|
| tca cag atg ggt agc agc ctt tca cag gtg ggt gac aac cta gag gac | 95 |
| Ser Gln Met Gly Ser Ser Leu Ser Gln Val Gly Asp Asn Leu Glu Asp | |
| 20 25 30 | |
| gac gcc att tac aag gtc cac gtg gag aag gac ttc atc gct ttc tgc | 143 |
| Asp Ala Ile Tyr Lys Val His Val Glu Lys Asp Phe Ile Ala Phe Cys | |
| 35 40 45 | |
| tcc tcg acc cca cat cat gtg tct tgg aga gac gtg aac aag gga tct | 191 |
| Ser Ser Thr Pro His His Val Ser Trp Arg Asp Val Asn Lys Gly Ser | |
| 50 55 60 | |
| ctc ttc att aca caa ctc atc acg tgc ttc caa aag tat tcg tgg tgc | 239 |
| Leu Phe Ile Thr Gln Leu Ile Thr Cys Phe Gln Lys Tyr Ser Trp Cys | |
| 65 70 75 | |
| ttt cat ctg gag gaa gta ttt cgg aag gta caa cag tca ttt gaa aaa | 287 |
| Phe His Leu Glu Glu Val Phe Arg Lys Val Gln Gln Ser Phe Glu Lys | |
| 80 85 90 95 | |
| cca aat gtt aga gcc cag atg ccc acc att gaa cga cta tcc atg aca | 335 |
| Pro Asn Val Arg Ala Gln Met Pro Thr Ile Glu Arg Leu Ser Met Thr | |
| 100 105 110 | |
| aga tac ttc tat ctc ttc cct ggc aat tgaaaatagc aatcatgggc | 382 |
| Arg Tyr Phe Tyr Leu Phe Pro Gly Asn | |
| 115 120 | |
| agtccagccc ttcttgacca acttggaataa gtaccttagc tagcacaaca cactcattta | 442 |
| acgttttggtat tctcaataaaa aatgaaaaca nctaaaaaaa aaaaaaaaaa aaaaaaaaaa | 500 |

<210> 21
 <211> 120
 <212> PRT
 <213> Felis catus

<400> 21

| |
|---|
| Glu Leu Leu Ile Ser Asp Ser Pro Ala Ala Pro Met Asp Ser Thr Ser |
| 1 5 10 15 |
| Gln Met Gly Ser Ser Leu Ser Gln Val Gly Asp Asn Leu Glu Asp Asp |
| 20 25 30 |
| Ala Ile Tyr Lys Val His Val Glu Lys Asp Phe Ile Ala Phe Cys Ser |
| 35 40 45 |
| Ser Thr Pro His His Val Ser Trp Arg Asp Val Asn Lys Gly Ser Leu |
| 50 55 60 |

Phe Ile Thr Gln Leu Ile Thr Cys Phe Gln Lys Tyr Ser Trp Cys Phe
65 70 75 80

His Leu Glu Glu Val Phe Arg Lys Val Gln Gln Ser Phe Glu Lys Pro
85 90 95

Asn Val Arg Ala Gln Met Pro Thr Ile Glu Arg Leu Ser Met Thr Arg
100 105 110

Tyr Phe Tyr Leu Phe Pro Gly Asn
115 120

<210> 22
<211> 500
<212> DNA
<213> Felis catus

<220>
<221> misc_feature
<222> (28)..(28)
<223> n = unknown at position 28

<400> 22
tttttttttt tttttttttt ttttttagntg ttttcatttt tattgagata ccaaacgtta 60
aatgagtgtg ttgtgctagc taaggctactt ttccaagttg gtcaagaagg gctggactgc 120
ccatgattgc tattttcaat tgccagggaa gagatagaag tatcttgtca tggatagtcg 180
ttcaatggtg ggcactctggg ctctaacatt tggtttttca aatgactggt gtaccttccg 240
aaatacttcc tccagatgaa agcaccacga atacttttgg aagcacgtga tgagtttgtt 300
aatgaagaga gatcccttgt tcacgtctct ccaagacaca tgatgtgggg tcgaggagca 360
gaaagcgatg aagtccttct ccacgtggac cttgtaaatg gcgtcgtcct ctaggttgtc 420
accacactgt gaaaggctgc taccatctg tgaagtgtg tccattgggg ccgctggaga 480
gtcactgac aacagttccc 500

<210> 23
<211> 1230
<212> DNA
<213> Felis catus

<220>
<221> CDS
<222> (1)..(1230)

<400> 23

| | |
|---|-----|
| atg gcc gac aag gat ctg aag ggc aag agg aag cag ttc atc aac tca | 48 |
| Met Ala Asp Lys Asp Leu Lys Gly Lys Arg Lys Gln Phe Ile Asn Ser | |
| 1 5 10 15 | |
| gtc ggc atg ggg acg gtc aac ggc ttg ctg gat gaa ctc ttt gag aaa | 96 |
| Val Gly Met Gly Thr Val Asn Gly Leu Leu Asp Glu Leu Phe Glu Lys | |
| 20 25 30 | |
| aac gtg ctg aac cag gag gag atg gag aga gta aaa tgt gaa aac gct | 144 |
| Asn Val Leu Asn Gln Glu Glu Met Glu Arg Val Lys Cys Glu Asn Ala | |
| 35 40 45 | |
| acc gtt atg gac aag gcc cga gct ctg atc gac agc gtc ctg cgg aaa | 192 |
| Thr Val Met Asp Lys Ala Arg Ala Leu Ile Asp Ser Val Leu Arg Lys | |
| 50 55 60 | |
| ggg cca cgg gcg tgc cag atc ttt atc tgt cac atc tgt gag gaa gac | 240 |
| Gly Pro Arg Ala Cys Gln Ile Phe Ile Cys His Ile Cys Glu Glu Asp | |
| 65 70 75 80 | |
| acc cac ctt gca gag acg ctg ggg ctc tcc tca agc cca caa tct gga | 288 |
| Thr His Leu Ala Glu Thr Leu Gly Leu Ser Ser Ser Pro Gln Ser Gly | |
| 85 90 95 | |
| aat tct cag aac acc acg gac tct gaa gta gcg ttt cct cct ctt cca | 336 |
| Asn Ser Gln Asn Thr Thr Asp Ser Glu Val Ala Phe Pro Pro Leu Pro | |
| 100 105 110 | |
| gcc agc gtg aat aac atg cct ggg ccg gct gag cca gaa gaa tct gta | 384 |
| Ala Ser Val Asn Asn Met Pro Gly Pro Ala Glu Pro Glu Glu Ser Val | |
| 115 120 125 | |
| gat gct ctc aag ctt tgt cct cgt gaa aac ttc gtg aaa ctg tgt aaa | 432 |
| Asp Ala Leu Lys Leu Cys Pro Arg Glu Asn Phe Val Lys Leu Cys Lys | |
| 130 135 140 | |
| cag agg gct gaa gag atc tac cca ata aag gag aga aag gat cgt act | 480 |
| Gln Arg Ala Glu Glu Ile Tyr Pro Ile Lys Glu Arg Lys Asp Arg Thr | |
| 145 150 155 160 | |
| cgt ctg gct ctc atc ata tgc aat acg acg ttc gat cat ctt tct ctc | 528 |
| Arg Leu Ala Leu Ile Ile Cys Asn Thr Thr Phe Asp His Leu Ser Leu | |
| 165 170 175 | |
| agg aag ggg gct gac ctt gac gtt gca ggg atg agg agg ctg ctt aca | 576 |
| Arg Lys Gly Ala Asp Leu Asp Val Ala Gly Met Arg Arg Leu Leu Thr | |
| 180 185 190 | |
| gac ctt ggc tac agt gtg cac ata aaa gag gaa ctc act gct aag gac | 624 |
| Asp Leu Gly Tyr Ser Val His Ile Lys Glu Glu Leu Thr Ala Lys Asp | |
| 195 200 205 | |
| atg gaa tca gag ctg agg gca ttt gct gcc cgt cca gag cac aag tcc | 672 |
| Met Glu Ser Glu Leu Arg Ala Phe Ala Ala Arg Pro Glu His Lys Ser | |
| 210 215 220 | |

| | |
|---|------|
| tcg gac agc aca ttc ctg gtg ttc atg tct cat ggc atc ctg agt gga | 720 |
| Ser Asp Ser Thr Phe Leu Val Phe Met Ser His Gly Ile Leu Ser Gly | |
| 225 230 235 240 | |
| atc tgt ggg acg aag tac agc gct gaa gga gac cca gat gta ttg gct | 768 |
| Ile Cys Gly Thr Lys Tyr Ser Ala Glu Gly Asp Pro Asp Val Leu Ala | |
| 245 250 255 | |
| tat gac acc atc ttc cag att ttc aac aac cgc aac tgc ctt agt cta | 816 |
| Tyr Asp Thr Ile Phe Gln Ile Phe Asn Asn Arg Asn Cys Leu Ser Leu | |
| 260 265 270 | |
| aag gac aag ccc aag gtc atc atc gtc cag gcc tgc aga ggt gaa aat | 864 |
| Lys Asp Lys Pro Lys Val Ile Ile Val Gln Ala Cys Arg Gly Glu Asn | |
| 275 280 285 | |
| ttg ggg gaa ctg ttg atc agt gac tct cca gcg gcc cca atg gac agc | 912 |
| Leu Gly Glu Leu Leu Ile Ser Asp Ser Pro Ala Ala Pro Met Asp Ser | |
| 290 295 300 | |
| act tca cag atg ggt agc agc ctt tca cag gtg ggt gac aac cta gag | 960 |
| Thr Ser Gln Met Gly Ser Ser Leu Ser Gln Val Gly Asp Asn Leu Glu | |
| 305 310 315 320 | |
| gac gac gcc att tac aag gtc cac gtg gag aag gac ttc atc gct ttc | 1008 |
| Asp Asp Ala Ile Tyr Lys Val His Val Glu Lys Asp Phe Ile Ala Phe | |
| 325 330 335 | |
| tgc tcc tcg acc cca cat cat gtg tct tgg aga gac gtg aac aag gga | 1056 |
| Cys Ser Ser Thr Pro His His Val Ser Trp Arg Asp Val Asn Lys Gly | |
| 340 345 350 | |
| tct ctc ttc att aca caa ctc atc acg tgc ttc caa aag tat tcg tgg | 1104 |
| Ser Leu Phe Ile Thr Gln Leu Ile Thr Cys Phe Gln Lys Tyr Ser Trp | |
| 355 360 365 | |
| tgc ttt cat ctg gag gaa gta ttt cgg aag gta caa cag tca ttt gaa | 1152 |
| Cys Phe His Leu Glu Glu Val Phe Arg Lys Val Gln Gln Ser Phe Glu | |
| 370 375 380 | |
| aaa cca aat gtt aga gcc cag atg ccc acc att gaa cga cta tcc atg | 1200 |
| Lys Pro Asn Val Arg Ala Gln Met Pro Thr Ile Glu Arg Leu Ser Met | |
| 385 390 395 400 | |
| aca aga tac ttc tat ctc ttc cct ggc aat | 1230 |
| Thr Arg Tyr Phe Tyr Leu Phe Pro Gly Asn | |
| 405 410 | |

<210> 24
 <211> 410
 <212> PRT
 <213> Felis catus

<400> 24

Met Ala Asp Lys Asp Leu Lys Gly Lys Arg Lys Gln Phe Ile Asn Ser

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| 1 | 5 | 10 | 15 | | | | | | | | | | | | | | |
| Val | Gly | Met | Gly | Thr | Val | Asn | Gly | Leu | Leu | Asp | Glu | Leu | Phe | Glu | Lys | | |
| | 20 | | | | | | | 25 | | | | | 30 | | | | |
| Asn | Val | Leu | Asn | Gln | Glu | Glu | Met | Glu | Arg | Val | Lys | Cys | Glu | Asn | Ala | | |
| | 35 | | | | | | 40 | | | | | 45 | | | | | |
| Thr | Val | Met | Asp | Lys | Ala | Arg | Ala | Leu | Ile | Asp | Ser | Val | Leu | Arg | Lys | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | |
| Gly | Pro | Arg | Ala | Cys | Gln | Ile | Phe | Ile | Cys | His | Ile | Cys | Glu | Glu | Asp | | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | | |
| Thr | His | Leu | Ala | Glu | Thr | Leu | Gly | Leu | Ser | Ser | Ser | Pro | Gln | Ser | Gly | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Asn | Ser | Gln | Asn | Thr | Thr | Asp | Ser | Glu | Val | Ala | Phe | Pro | Pro | Leu | Pro | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Ala | Ser | Val | Asn | Asn | Met | Pro | Gly | Pro | Ala | Glu | Pro | Glu | Glu | Ser | Val | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Asp | Ala | Leu | Lys | Leu | Cys | Pro | Arg | Glu | Asn | Phe | Val | Lys | Leu | Cys | Lys | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Gln | Arg | Ala | Glu | Glu | Ile | Tyr | Pro | Ile | Lys | Glu | Arg | Lys | Asp | Arg | Thr | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Arg | Leu | Ala | Leu | Ile | Ile | Cys | Asn | Thr | Thr | Phe | Asp | His | Leu | Ser | Leu | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Arg | Lys | Gly | Ala | Asp | Leu | Asp | Val | Ala | Gly | Met | Arg | Arg | Leu | Leu | Thr | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Asp | Leu | Gly | Tyr | Ser | Val | His | Ile | Lys | Glu | Glu | Leu | Thr | Ala | Lys | Asp | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Met | Glu | Ser | Glu | Leu | Arg | Ala | Phe | Ala | Ala | Arg | Pro | Glu | His | Lys | Ser | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Ser | Asp | Ser | Thr | Phe | Leu | Val | Phe | Met | Ser | His | Gly | Ile | Leu | Ser | Gly | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |

Ile Cys Gly Thr Lys Tyr Ser Ala Glu Gly Asp Pro Asp Val Leu Ala
 245 250 255

Tyr Asp Thr Ile Phe Gln Ile Phe Asn Asn Arg Asn Cys Leu Ser Leu
 260 265 270

Lys Asp Lys Pro Lys Val Ile Ile Val Gln Ala Cys Arg Gly Glu Asn
 275 280 285

Leu Gly Glu Leu Leu Ile Ser Asp Ser Pro Ala Ala Pro Met Asp Ser
 290 295 300

Thr Ser Gln Met Gly Ser Ser Leu Ser Gln Val Gly Asp Asn Leu Glu
 305 310 315 320

Asp Asp Ala Ile Tyr Lys Val His Val Glu Lys Asp Phe Ile Ala Phe
 325 330 335

Cys Ser Ser Thr Pro His His Val Ser Trp Arg Asp Val Asn Lys Gly
 340 345 350

Ser Leu Phe Ile Thr Gln Leu Ile Thr Cys Phe Gln Lys Tyr Ser Trp
 355 360 365

Cys Phe His Leu Glu Glu Val Phe Arg Lys Val Gln Gln Ser Phe Glu
 370 375 380

Lys Pro Asn Val Arg Ala Gln Met Pro Thr Ile Glu Arg Leu Ser Met
 385 390 395 400

Thr Arg Tyr Phe Tyr Leu Phe Pro Gly Asn
 405 410

<210> 25
 <211> 1230
 <212> DNA
 <213> Felis catus

<400> 25
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 ggctctaaca tttgggtttt caaatgactg ttgtaccttc cgaaatactt cctccagatg 120
 aaagcaccac gaatactttt ggaagcacgt gatgagttgt gtaatgaaga gagatccctt 180


```

gttcacgtct ctccaagaca catgatgtgg ggtcgaggag cagaaagcga tgaagtcctt 240
ctccacgtgg accttgtaaa tggcgtcgtc ctctaggttg tcacccacct gtgaaaggct 300
gctacccatc tgtgaagtgc tgtccattgg ggccgctgga gagtcactga tcaacagttc 360
ccccaaattt tcacctctgc aggccctggac gatgatgacc ttgggcttgt ccttttagact 420
aaggcagttg cgggttggtga aaatctggaa gatggtgtca taagccaata catctgggtc 480
tccttcagcg ctgtacttcg tcccacagat tccactcagg atgccatgag acatgaacac 540
caggaatgtg ctgtccgagg acttgtgctc tggacgggca gcaaatagcc tcagctctga 600
ttccatgtcc ttagcagtga gttcctcttt tatgtgcaca ctgtagccaa ggtctgtaag 660
cagcctcctc atccctgcaa cgtcaagggtc agcccccttc ctgagagaaa gatgatcgaa 720
cgtcgtattg catatgatga gagccagacg agtacgatcc tttctctcct ttattgggta 780
gatctcttca gccctctgtt tacacagttt cacgaagttt tcacgaggac aaagcttgag 840
agcatctaca gattcttctg gctcagccgg ccagggcatg ttattcacgc tggctggaag 900
aggaggaaac gctacttcag agtcctgtgt gttctgagaa tttccagatt gtgggcttga 960
ggagagcccc agcgtctctg caagggtgggt gtcttcctca cagatgtgac agataaagat 1020
ctggcacgcc cgtggccctt tccgcaggac gctgtcgatc agagctcggg ccttgtccat 1080
aacggtagcg ttttcacatt ttactctctc catctcctcc tgggttcagca cgtttttctc 1140
aaagagttca tccagcaagc cgttgaccgt ccccatgccg actgagttga tgaactgctt 1200
cctcttgccc ttcagatcct tgtcggccat 1230

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```

<210> 26
<211> 921
<212> DNA
<213> Felis catus

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<220>
<221> CDS
<222> (1)..(921)

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<400> 26
ata tgg gaa ctg gag aaa aac gtt tat gtt gta gag ttg gac tgg cac 48
Ile Trp Glu Leu Glu Lys Asn Val Tyr Val Val Glu Leu Asp Trp His
1 5 10 15

cct gat gcc ccc gga gaa atg gtg gtc ctc acc tgc aat act cct gaa 96
Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asn Thr Pro Glu
20 25 30

```

| | |
|---|-----|
| gaa gat gac atc acc tgg acc tct gac cag agc agt gaa gtc cta ggc Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln Ser Ser Glu Val Leu Gly 35 40 45 | 144 |
| tct ggt aaa act ctg acc atc caa gtc aaa gaa ttt gca gat gct ggc Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Ala Asp Ala Gly 50 55 60 | 192 |
| cag tat acc tgt cat aaa gga ggc gag gtt ctg agc cat tcg ttc ctc Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Phe Leu 65 70 75 80 | 240 |
| ctg ata cac aaa aag gaa gat gga att tgg tcc act gat atc tta agg Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Arg 85 90 95 | 288 |
| gaa cag aaa gaa tcc aaa aat aag atc ttt cta aaa tgt gag gca aag Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys 100 105 110 | 336 |
| aat tat tct gga cgt ttc acc tgc tgg tgg ctg acg gca atc agt acc Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr 115 120 125 | 384 |
| gat ttg aaa ttc act gtc aaa agc agc aga ggc tcc tct gac ccc caa Asp Leu Lys Phe Thr Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln 130 135 140 | 432 |
| gag gtg act tgt gga gca gcg aca ctc tca gca gag aag gtc aga gtg Glu Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Lys Val Arg Val 145 150 155 160 | 480 |
| gac aac agg gat tat aag aag tac aca gtg gag tgt cag gag ggc agt Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser 165 170 175 | 528 |
| gcc tgc ccg gct gcc gag gag agc cta ccc att gaa gtc gtg gtg gac Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp 180 185 190 | 576 |
| gct att cac aag ctc aag tac gaa aac tac acc agc agc ttc ttc atc Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile 195 200 205 | 624 |
| agg gac atc atc aaa ccg gac cca ccc aag aac ctg caa ctg aag cca Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro 210 215 220 | 672 |
| tta aaa aat tct cgg cat gtg gaa gtg agc tgg gaa tac cct gac acc Leu Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr 225 230 235 240 | 720 |
| tgg agc acc cca cat tcc tac ttc tcc tta aca ttt ggc gta cag gtc Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Gly Val Gln Val 245 250 255 | 768 |
| cag ggc aag aac aac aga gaa aag aaa gac aga ctc tcc gtg gac aag | 816 |

| | |
|---|-----|
| Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Ser Val Asp Lys | |
| 260 265 270 | |
| acc tca gcc aag gtc gtg tgc cac aag gat gcc aag atc cgc gtg caa | 864 |
| Thr Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln | |
| 275 280 285 | |
| gcc aga gac cgc tac tat agc tca tcc tgg agc aac tgg gca tcc gtg | 912 |
| Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asn Trp Ala Ser Val | |
| 290 295 300 | |
| tcc tgc agt | 921 |
| Ser Cys Ser | |
| 305 | |

<210> 27
 <211> 307
 <212> PRT
 <213> Felis catus

<400> 27

| |
|---|
| Ile Trp Glu Leu Glu Lys Asn Val Tyr Val Val Glu Leu Asp Trp His |
| 1 5 10 15 |

| |
|---|
| Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asn Thr Pro Glu |
| 20 25 30 |

| |
|---|
| Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln Ser Ser Glu Val Leu Gly |
| 35 40 45 |

| |
|---|
| Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Ala Asp Ala Gly |
| 50 55 60 |

| |
|---|
| Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Phe Leu |
| 65 70 75 80 |

| |
|---|
| Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Arg |
| 85 90 95 |

| |
|---|
| Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys |
| 100 105 110 |

| |
|---|
| Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr |
| 115 120 125 |

| |
|---|
| Asp Leu Lys Phe Thr Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln |
| 130 135 140 |

Glu Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Lys Val Arg Val
 145 150 155 160

Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser
 165 170 175

Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp
 180 185 190

Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile
 195 200 205

Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro
 210 215 220

Leu Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr
 225 230 235 240

Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Gly Val Gln Val
 245 250 255

Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Ser Val Asp Lys
 260 265 270

Thr Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln
 275 280 285

Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asn Trp Ala Ser Val
 290 295 300

Ser Cys Ser
 305

<210> 28
 <211> 921
 <212> DNA
 <213> Felis catus

<400> 28
 actgcaggac acggatgccc agttgctcca ggatgagcta tagtagcggt ctctggcttg 60
 cacgcggatc ttggcatcct tgtggcacac gaccttggct gaggtcttgt ccacggagag 120
 tctgtctttc ttttctctgt tgttcttgcc ctggacctgt acgccaaatg ttaaggagaa 180

gtaggaatgt ggggtgctcc aggtgtcagg gtattcccag ctacttcca catgccgaga 240
 attttttaat ggcttcagtt gcaggttctt ggggtgggtcc ggtttgatga tgtccctgat 300
 gaagaagctg ctggtgtagt tttcgtactt gagcttgtga atagcgtcca ccacgacttc 360
 aatgggtagg ctctcctcgg cagccgggca ggcactgccc tctgacact ccactgtgta 420
 cttcttataa tccctgttgt ccactctgac cttctctgct gagagtgtcg ctgctccaca 480
 agtcacctct tgggggtcag aggagcctct gctgcttttg acagtgaatt tcaaacgggt 540
 actgattgcc gtcagccacc agcagggtgaa acgtccagaa taattctttg cctcacattt 600
 tagaaagatc ttatttttgg attctttctg ttcccttaag atatcagtgg accaaattcc 660
 atcttccttt ttgtgtatca ggaggaacga atggctcaga acctcgctc ctttatgaca 720
 ggtatactgg ccagcatctg caaattcttt gacttggatg gtcagagttt taccagagcc 780
 taggacttca ctgctctggt cagagggtcca ggtgatgtca tcttcttcag gagtattgca 840
 ggtgaggacc accatttctc cgggggcac cagggtgccag tccaactcta caacataaac 900
 gtttttctcc agttcccata t 921

<210> 29
 <211> 987
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (1)..(987)

<400> 29
 atg cat cct cag cag ttg gtc atc gcc tgg ttt tcc ctg gtt ttg ctg 48
 Met His Pro Gln Gln Leu Val Ile Ala Trp Phe Ser Leu Val Leu Leu
 1 5 10 15
 gca cct ccc ctc atg gcc ata tgg gaa ctg gag aaa aac gtt tat gtt 96
 Ala Pro Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asn Val Tyr Val
 20 25 30
 gta gag ttg gac tgg cac cct gat gcc ccc gga gaa atg gtg gtc ctc 144
 Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu
 35 40 45
 acc tgc aat act cct gaa gaa gat gac atc acc tgg acc tct gac cag 192
 Thr Cys Asn Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln
 50 55 60
 agc agt gaa gtc cta ggc tct ggt aaa act ctg acc atc caa gtc aaa 240
 Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys

| 65 | 70 | 75 | 80 | |
|---|-----|-----|-----|-----|
| gaa ttt gca gat gct ggc cag tat acc tgt cat aaa gga ggc gag gtt | | | | 288 |
| Glu Phe Ala Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val | 85 | 90 | 95 | |
| ctg agc cat tcg ttc ctc ctg ata cac aaa aag gaa gat gga att tgg | | | | 336 |
| Leu Ser His Ser Phe Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp | 100 | 105 | 110 | |
| tcc act gat atc tta agg gaa cag aaa gaa tcc aaa aat aag atc ttt | | | | 384 |
| Ser Thr Asp Ile Leu Arg Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe | 115 | 120 | 125 | |
| cta aaa tgt gag gca aag aat tat tct gga cgt ttc acc tgc tgg tgg | | | | 432 |
| Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp | 130 | 135 | 140 | |
| ctg acg gca atc agt acc gat ttg aaa ttc act gtc aaa agc agc aga | | | | 480 |
| Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Thr Val Lys Ser Ser Arg | 145 | 150 | 155 | 160 |
| ggc tcc tct gac ccc caa ggg gtg act tgt gga gca gcg aca ctc tca | | | | 528 |
| Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser | 165 | 170 | 175 | |
| gca gag aag gtc aga gtg gac aac agg gat tat aag aag tac aca gtg | | | | 576 |
| Ala Glu Lys Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val | 180 | 185 | 190 | |
| gag tgt cag gag ggc agt gcc tgc ccg gct gcc gag gag agc cta ccc | | | | 624 |
| Glu Cys Gln Glu Gly Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro | 195 | 200 | 205 | |
| att gaa gtc gtg gtg gac gct att cac aag ctc aag tac gaa aac tac | | | | 672 |
| Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr | 210 | 215 | 220 | |
| acc agc agc ttc ttc atc agg gac atc atc aaa ccg gac cca ccc aag | | | | 720 |
| Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys | 225 | 230 | 235 | 240 |
| aac ctg caa ctg aag cca tta aaa aat tct cgg cat gtg gaa gtg agc | | | | 768 |
| Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser | 245 | 250 | 255 | |
| tgg gaa tac cct gac acc tgg agc acc cca cat tcc tac ttc tcc tta | | | | 816 |
| Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu | 260 | 265 | 270 | |
| aca ttt ggc gta cag gtc cag ggc aag aac aac aga gaa aag aaa gac | | | | 864 |
| Thr Phe Gly Val Gln Val Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp | 275 | 280 | 285 | |
| aga ctc tcc gtg gac aag acc tca gcc aag gtc gtg tgc cac aag gat | | | | 912 |
| Arg Leu Ser Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp | 290 | 295 | 300 | |

gcc aag atc cgc gtg caa gcc aga gac cgc tac tat agc tca tcc tgg 960
 Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp
 305 310 315 320

agc aac tgg gca tcc gtg tcc tgc agt 987
 Ser Asn Trp Ala Ser Val Ser Cys Ser
 325

<210> 30
 <211> 329
 <212> PRT
 <213> Felis catus

<400> 30

Met His Pro Gln Gln Leu Val Ile Ala Trp Phe Ser Leu Val Leu Leu
 1 5 10 15

Ala Pro Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asn Val Tyr Val
 20 25 30

Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu
 35 40 45

Thr Cys Asn Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln
 50 55 60

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
 65 70 75 80

Glu Phe Ala Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
 85 90 95

Leu Ser His Ser Phe Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp
 100 105 110

Ser Thr Asp Ile Leu Arg Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe
 115 120 125

Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140

Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Thr Val Lys Ser Ser Arg
 145 150 155 160

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
165 170 175

Ala Glu Lys Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val
180 185 190

Glu Cys Gln Glu Gly Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro
195 200 205

Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr
210 215 220

Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
225 230 235 240

Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser
245 250 255

Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
260 265 270

Thr Phe Gly Val Gln Val Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp
275 280 285

Arg Leu Ser Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp
290 295 300

Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp
305 310 315 320

Ser Asn Trp Ala Ser Val Ser Cys Ser
325

<210> 31
<211> 987
<212> DNA
<213> Felis catus

<400> 31
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cacgcggatc ttggcatcct tgtggcacac gaccttggt gaggtcttgt ccacggagag 120
tctgtctttc ttttctctgt tgttcttgcc ctggacctgt acgccaaatg ttaaggagaa 180
gtaggaatgt ggggtgctcc aggtgtcagg gtattcccag ctacttcca catgccgaga 240

attttttaat ggcttcagtt gcaggttctt ggggtgggtcc ggtttgatga tgtccctgat 300
 gaagaagctg ctggtgtagt tttcgtactt gagcttgtga atagcgtcca ccacgacttc 360
 aatgggtagg ctctcctcgg cagccgggca ggcactgccc tcctgacact ccactgtgta 420
 cttcttataa tccctgttgt ccactctgac cttctctgct gagagtgtcg ctgctccaca 480
 agtcaccctt tgggggtcag aggagcctct gctgcttttg acagtgaatt tcaaatcggt 540
 actgattgcc gtcagccacc agcaggtgaa acgtccagaa taattctttg cctcacattt 600
 tagaaagatc ttatttttgg attctttctg ttcctttaag atatcagtgg accaaattcc 660
 atcttctttt ttgtgtatca ggaggaacga atggctcaga acctcgctc ctttatgaca 720
 ggtatactgg ccagcatctg caaattcttt gacttggatg gtcagagttt taccagagcc 780
 taggacttca ctgctctggt cagaggtcca ggtgatgtca tcttcttcag gagtattgca 840
 ggtgaggacc accatttctc cgggggcac accgggtgccag tccaactcta caacataaac 900
 gtttttctcc agttcccata tggccatgag gggaggtgcc agcaaaacca gggaaaacca 960
 ggcgatgacc aactgctgag gatgcat 987

<210> 32
 <211> 666
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (1)..(666)

<400> 32
 atg tgc ccg ccg cgt ggc ctc ctc ctt gta acc atc ctg gtc ctg tta 48
 Met Cys Pro Pro Arg Gly Leu Leu Leu Val Thr Ile Leu Val Leu Leu
 1 5 10 15
 aac cac ctg gac cac ctc agt ttg gcc agg aac ctc ccc aca ccc aca 96
 Asn His Leu Asp His Leu Ser Leu Ala Arg Asn Leu Pro Thr Pro Thr
 20 25 30
 cca agc cca gga atg ttc cag tgc ctc aac cac tcc caa acc ctg ctg 144
 Pro Ser Pro Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu Leu
 35 40 45
 cga gcc atc agc aac acg ctt cag aag gcc aga caa act cta gaa ttt 192
 Arg Ala Ile Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe
 50 55 60
 tac tcc tgc act tcc gaa gag att gat cat gaa gat atc aca aaa gat 240
 Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp

| 65 | 70 | 75 | 80 | |
|---|-----|-----|-----|-----|
| aaa acc agc aca gtg gag gcc tgc tta cca ctg gaa tta acc atg aat | | | | 288 |
| Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn | | | | |
| | 85 | 90 | 95 | |
| gag agt tgc ctg gct tcc aga gag atc tct ctg ata act aat ggg agt | | | | 336 |
| Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser | | | | |
| | 100 | 105 | 110 | |
| tgc ctg gcc tcc aga aag acc tct ttt atg acg acc ctg tgc ctt agc | | | | 384 |
| Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Thr Thr Leu Cys Leu Ser | | | | |
| | 115 | 120 | 125 | |
| agt atc tat gag gac ttg aag atg tac cag gtg gag ttc aag gcc atg | | | | 432 |
| Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Ala Met | | | | |
| | 130 | 135 | 140 | |
| aat gca aag ctg tta atg gat cct aaa agg cag atc ttt ctg gat caa | | | | 480 |
| Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln | | | | |
| | 145 | 150 | 155 | 160 |
| aac atg ctg aca gct att gat gag ctg tta cag gcc ctg aat gtc aac | | | | 528 |
| Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Val Asn | | | | |
| | 165 | 170 | 175 | |
| agt gtg act gtg cca cag aac tcc tcc ctg gaa gaa ccg gat ttt tat | | | | 576 |
| Ser Val Thr Val Pro Gln Asn Ser Ser Leu Glu Glu Pro Asp Phe Tyr | | | | |
| | 180 | 185 | 190 | |
| aaa act aaa atc aag ctc tgc ata ctt ctt cat gct ttc aga att cgt | | | | 624 |
| Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg | | | | |
| | 195 | 200 | 205 | |
| gca gtg acc atc aat aga atg atg agc tat ctg aat gct tcc | | | | 666 |
| Ala Val Thr Ile Asn Arg Met Met Ser Tyr Leu Asn Ala Ser | | | | |
| | 210 | 215 | 220 | |

<210> 33
 <211> 222
 <212> PRT
 <213> Felis catus

<400> 33

| |
|---|
| Met Cys Pro Pro Arg Gly Leu Leu Leu Val Thr Ile Leu Val Leu Leu |
| 1 5 10 15 |

| |
|---|
| Asn His Leu Asp His Leu Ser Leu Ala Arg Asn Leu Pro Thr Pro Thr |
| 20 25 30 |

| |
|---|
| Pro Ser Pro Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu Leu |
| 35 40 45 |

Arg Ala Ile Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe
 50 55 60

Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp
 65 70 75 80

Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn
 85 90 95

Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser
 100 105 110

Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Thr Thr Leu Cys Leu Ser
 115 120 125

Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Ala Met
 130 135 140

Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln
 145 150 155 160

Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Val Asn
 165 170 175

Ser Val Thr Val Pro Gln Asn Ser Ser Leu Glu Glu Pro Asp Phe Tyr
 180 185 190

Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg
 195 200 205

Ala Val Thr Ile Asn Arg Met Met Ser Tyr Leu Asn Ala Ser
 210 215 220

<210> 34
 <211> 666
 <212> DNA
 <213> Felis catus

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 aagaagtatg cagagcttga ttttagtttt ataaaaatcc ggttcttcca gggaggagtt 120
 ctgtggcaca gtcacactgt tgacattcag ggctgtaac agctcatcaa tagctgtcag 180

| | |
|--|-----|
| catgttttga tccagaaaga tctgcctttt aggatccatt aacagctttg cattcatggc | 240 |
| cttgaactcc acctggtaca tcttcaagtc ctcatagata ctgctaaggc acagggtcgt | 300 |
| cataaaagag gtctttcttg aggccaggca actcccatta gttatcagag agatctctct | 360 |
| ggaagccagg caactctcat tcatggttaa ttccagtggg aagcaggcct ccactgtgct | 420 |
| ggtttttatct tttgtgatat cttcatgata aatctcttcg gaagtgcagg agtaaaattc | 480 |
| tagagtttgt ctggccttct gaagcgtggt gctgatggct cgcagcaggg tttgggagtg | 540 |
| gttgaggcac tggaacattc ctgggcttgg tgtgggtgtg gggagggttc tggccaaact | 600 |
| gaggtgggtcc aggtgggtta acaggaccag gatgggtaca aggaggaggc cacgcggcgg | 660 |
| gcacat | 666 |

<210> 35
 <211> 591
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (1)..(591)

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| agg aac ctc ccc aca ccc aca cca agc cca gga atg ttc cag tgc ctc | 48 |
| Arg Asn Leu Pro Thr Pro Thr Pro Ser Pro Gly Met Phe Gln Cys Leu | |
| 1 5 10 15 | |
| aac cac tcc caa acc ctg ctg cga gcc atc agc aac acg ctt cag aag | 96 |
| Asn His Ser Gln Thr Leu Leu Arg Ala Ile Ser Asn Thr Leu Gln Lys | |
| 20 25 30 | |
| gcc aga caa act cta gaa ttt tac tcc tgc act tcc gaa gag att gat | 144 |
| Ala Arg Gln Thr Leu Glu Phe Tyr Ser Cys Thr Ser Glu Glu Ile Asp | |
| 35 40 45 | |
| cat gaa gat atc aca aaa gat aaa acc agc aca gtg gag gcc tgc tta | 192 |
| His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu | |
| 50 55 60 | |
| cca ctg gaa tta acc atg aat gag agt tgc ctg gct tcc aga gag atc | 240 |
| Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile | |
| 65 70 75 80 | |
| tct ctg ata act aat ggg agt tgc ctg gcc tcc aga aag acc tct ttt | 288 |
| Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe | |
| 85 90 95 | |
| atg acg acc ctg tgc ctt agc agt atc tat gag gac ttg aag atg tac | 336 |
| Met Thr Thr Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr | |
| 100 105 110 | |

| | |
|---|-----|
| cag gtg gag ttc aag gcc atg aat gca aag ctg tta atg gat cct aaa | 384 |
| Gln Val Glu Phe Lys Ala Met Asn Ala Lys Leu Leu Met Asp Pro Lys | |
| 115 120 125 | |
| | |
| agg cag atc ttt ctg gat caa aac atg ctg aca gct att gat gag ctg | 432 |
| Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Thr Ala Ile Asp Glu Leu | |
| 130 135 140 | |
| | |
| tta cag gcc ctg aat gtc aac agt gtg act gtg cca cag aac tcc tcc | 480 |
| Leu Gln Ala Leu Asn Val Asn Ser Val Thr Val Pro Gln Asn Ser Ser | |
| 145 150 155 160 | |
| | |
| ttg gaa gaa ccg gat ttt tat aaa act aaa atc aag ctc tgc ata ctt | 528 |
| Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu | |
| 165 170 175 | |
| | |
| ctt cat gct ttc aga att cgt gca gtg acc atc aat aga atg atg agc | 576 |
| Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Met Met Ser | |
| 180 185 190 | |
| | |
| tat ctg aat gct tcc | 591 |
| Tyr Leu Asn Ala Ser | |
| 195 | |

<210> 36
 <211> 197
 <212> PRT
 <213> Felis catus

<400> 36

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| Arg Asn Leu Pro Thr Pro Thr Pro Ser Pro Gly Met Phe Gln Cys Leu | |
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| Asn His Ser Gln Thr Leu Leu Arg Ala Ile Ser Asn Thr Leu Gln Lys | |
| 20 25 30 | |
| | |
| Ala Arg Gln Thr Leu Glu Phe Tyr Ser Cys Thr Ser Glu Glu Ile Asp | |
| 35 40 45 | |
| | |
| His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu | |
| 50 55 60 | |
| | |
| Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile | |
| 65 70 75 80 | |
| | |
| Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe | |
| 85 90 95 | |

Met Thr Thr Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
 100 105 110

Gln Val Glu Phe Lys Ala Met Asn Ala Lys Leu Leu Met Asp Pro Lys
 115 120 125

Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Thr Ala Ile Asp Glu Leu
 130 135 140

Leu Gln Ala Leu Asn Val Asn Ser Val Thr Val Pro Gln Asn Ser Ser
 145 150 155 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
 165 170 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Met Met Ser
 180 185 190

Tyr Leu Asn Ala Ser
 195

<210> 37
 <211> 591
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 ctgtggcaca gtcacactgt tgacattcag ggctgtaac agctcatcaa tagctgtcag 180
 catgttttga tccagaaaga tctgcctttt aggatccatt aacagctttg cattcatggc 240
 cttgaactcc acctggtaca tcttcaagtc ctcatagata ctgctaaggc acagggtcgt 300
 cataaaagag gtcttttctgg aggccaggca actccatta gttatcagag agatctctct 360
 ggaagccagg caactctcat tcatggttaa ttccagtggc aagcaggcct cactgtgct 420
 gggttttatct tttgtgatat cttcatgac aatctcttcg gaagtgcagg agtaaaattc 480
 tagagtttgt ctggccttct gaagcgtggt gctgatggct cgcagcaggg tttgggagtg 540
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<210> 38
 <211> 1599

<212> DNA
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<220>
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Met His Pro Gln Gln Leu Val Ile Ala Trp Leu Ser Leu Val Leu Leu
1          5          10          15

gca cct ccc ctc atg gcc ata tgg gaa ctg gag aaa aac gtt tat gtt      96
Ala Pro Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asn Val Tyr Val
          20          25          30

gta gag ttg gac tgg cac cct gat gcc ccc gga gaa atg gtg gtc ctc      144
Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu
          35          40          45

acc tgc aat act cct gaa gaa gat gac atc acc tgg acc tct gac cag      192
Thr Cys Asn Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln
          50          55          60

agc agt gaa gtc cta ggc tct ggt aaa act ctg acc atc caa gtc aaa      240
Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
65          70          75          80

gaa ttt gca gat gct ggc cag tat acc tgt cat aaa gga ggc gag gtt      288
Glu Phe Ala Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
          85          90          95

ctg agc cat tcg ttc ctc ctg ata cac aaa aag gaa gat gga att tgg      336
Leu Ser His Ser Phe Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp
          100          105          110

tcc act gat atc tta agg gaa cag aaa gaa tcc aaa aat aag atc ttt      384
Ser Thr Asp Ile Leu Arg Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe
          115          120          125

cta aaa tgt gag gca aag aat tat tct gga cgt ttc acc tgc tgg tgg      432
Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
          130          135          140

ctg acg gca atc agt acc gat ttg aaa ttc act gtc aaa agc agc aga      480
Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Thr Val Lys Ser Ser Arg
145          150          155          160

ggc tcc tct gac ccc caa gag gtg act tgt gga gca gcg aca ctc tca      528
Gly Ser Ser Asp Pro Gln Glu Val Thr Cys Gly Ala Ala Thr Leu Ser
          165          170          175

gca gag aag gtc aga gtg gac aac agg gat tat aag aag tac aca gtg      576
Ala Glu Lys Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val
          180          185          190

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| | |
|---|------|
| gag tgt cag gag ggc agt gcc tgc ccg gct gcc gag gag agc cta ccc Glu Cys Gln Glu Gly Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro 195 200 205 | 624 |
| att gaa gtc gtg gtg gac gct att cac aag ctc aag tac gaa aac tac Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr 210 215 220 | 672 |
| acc agc agc ttc ttc atc agg gac atc atc aaa ccg gac cca ccc aag Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys 225 230 235 240 | 720 |
| aac ctg caa ctg aag cca tta aaa aat tct cgg cat gtg gaa gtg agc Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser 245 250 255 | 768 |
| tgg gaa tac cct gac acc tgg agc acc cca cat tcc tac ttc tcc tta Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu 260 265 270 | 816 |
| aca ttt ggc gta cag gtc cag ggc aag aac aac aga gaa aag aaa gac Thr Phe Gly Val Gln Val Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp 275 280 285 | 864 |
| aga ctc tcc gtg gac aag acc tca gcc aag gtc gtg tgc cac aag gat Arg Leu Ser Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp 290 295 300 | 912 |
| gcc aag atc cgc gtg caa gcc aga gac cgc tac tat agc tca tcc tgg Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp 305 310 315 320 | 960 |
| agc aac tgg gca tcc gtg tcc tgc agt ggt ggc ggt ggc ggc gga tct Ser Asn Trp Ala Ser Val Ser Cys Ser Gly Gly Gly Gly Gly Gly Ser 325 330 335 | 1008 |
| aga aac ttg cca acc cct act cca tcc ccg ggg atg ttc cag tgc ctc Arg Asn Leu Pro Thr Pro Thr Pro Ser Pro Gly Met Phe Gln Cys Leu 340 345 350 | 1056 |
| aac cac tcc caa acc ctg ctg cga gcc atc agc aac acg ctt cag aag Asn His Ser Gln Thr Leu Leu Arg Ala Ile Ser Asn Thr Leu Gln Lys 355 360 365 | 1104 |
| gcc aga caa act cta gaa ttt tac tcc tgc act tcc gaa gag att gat Ala Arg Gln Thr Leu Glu Phe Tyr Ser Cys Thr Ser Glu Glu Ile Asp 370 375 380 | 1152 |
| cat gaa gat atc aca aaa gat aaa acc agc aca gtg gag gcc tgc tta His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu 385 390 395 400 | 1200 |
| cca ctg gaa tta acc atg aat gag agt tgc ctg gct tcc aga gag atc Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile 405 410 415 | 1248 |
| tct ctg ata act aat ggg agt tgc ctg gcc tcc aga aag acc tct ttt | 1296 |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Ser | Leu | Ile | Thr | Asn | Gly | Ser | Cys | Leu | Ala | Ser | Arg | Lys | Thr | Ser | Phe | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |
| atg | acg | acc | ctg | tgc | ctt | agc | agt | atc | tat | gag | gac | ttg | aag | atg | tac | 1344 |
| Met | Thr | Thr | Leu | Cys | Leu | Ser | Ser | Ile | Tyr | Glu | Asp | Leu | Lys | Met | Tyr | |
| | | 435 | | | | 440 | | | | | | 445 | | | | |
| cag | gtg | gag | ttc | aag | gcc | atg | aat | gca | aag | ctg | tta | atg | gat | cct | aaa | 1392 |
| Gln | Val | Glu | Phe | Lys | Ala | Met | Asn | Ala | Lys | Leu | Leu | Met | Asp | Pro | Lys | |
| | 450 | | | | | 455 | | | | | 460 | | | | | |
| agg | cag | atc | ttt | ctg | gat | caa | aac | atg | ctg | aca | gct | att | gat | gag | ctg | 1440 |
| Arg | Gln | Ile | Phe | Leu | Asp | Gln | Asn | Met | Leu | Thr | Ala | Ile | Asp | Glu | Leu | |
| 465 | | | | 470 | | | | | 475 | | | | | | 480 | |
| tta | cag | gcc | ctg | aat | gtc | aac | agt | gtg | act | gtg | cca | cag | aac | tcc | tcc | 1488 |
| Leu | Gln | Ala | Leu | Asn | Val | Asn | Ser | Val | Thr | Val | Pro | Gln | Asn | Ser | Ser | |
| | | | 485 | | | | | 490 | | | | | | 495 | | |
| ttg | gaa | gaa | ccg | gat | ttt | tat | aaa | act | aaa | atc | aag | ctc | tgc | ata | ctt | 1536 |
| Leu | Glu | Glu | Pro | Asp | Phe | Tyr | Lys | Thr | Lys | Ile | Lys | Leu | Cys | Ile | Leu | |
| | | | 500 | | | | | 505 | | | | | 510 | | | |
| ctt | cat | gct | ttc | aga | att | cgt | gca | gtg | acc | atc | aat | aga | atg | atg | agc | 1584 |
| Leu | His | Ala | Phe | Arg | Ile | Arg | Ala | Val | Thr | Ile | Asn | Arg | Met | Met | Ser | |
| | | 515 | | | | 520 | | | | | | 525 | | | | |
| tat | ctg | aat | gct | tcc | | | | | | | | | | | | 1599 |
| Tyr | Leu | Asn | Ala | Ser | | | | | | | | | | | | |
| | | 530 | | | | | | | | | | | | | | |

<210> 39
 <211> 533
 <212> PRT
 <213> Felis catus

<400> 39

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| Met | His | Pro | Gln | Gln | Leu | Val | Ile | Ala | Trp | Leu | Ser | Leu | Val | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Pro | Pro | Leu | Met | Ala | Ile | Trp | Glu | Leu | Glu | Lys | Asn | Val | Tyr | Val |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Leu | Asp | Trp | His | Pro | Asp | Ala | Pro | Gly | Glu | Met | Val | Val | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | Asn | Thr | Pro | Glu | Glu | Asp | Asp | Ile | Thr | Trp | Thr | Ser | Asp | Gln |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Glu | Val | Leu | Gly | Ser | Gly | Lys | Thr | Leu | Thr | Ile | Gln | Val | Lys |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

Glu Phe Ala Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
 85 90 95
 Leu Ser His Ser Phe Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp
 100 105 110
 Ser Thr Asp Ile Leu Arg Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe
 115 120 125
 Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140
 Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Thr Val Lys Ser Ser Arg
 145 150 155 160
 Gly Ser Ser Asp Pro Gln Glu Val Thr Cys Gly Ala Ala Thr Leu Ser
 165 170 175
 Ala Glu Lys Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val
 180 185 190
 Glu Cys Gln Glu Gly Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro
 195 200 205
 Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr
 210 215 220
 Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
 225 230 235 240
 Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser
 245 250 255
 Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
 260 265 270
 Thr Phe Gly Val Gln Val Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp
 275 280 285
 Arg Leu Ser Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp
 290 295 300

Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp
 305 310 315 320

Ser Asn Trp Ala Ser Val Ser Cys Ser Gly Gly Gly Gly Gly Ser
 325 330 335

Arg Asn Leu Pro Thr Pro Thr Pro Ser Pro Gly Met Phe Gln Cys Leu
 340 345 350

Asn His Ser Gln Thr Leu Leu Arg Ala Ile Ser Asn Thr Leu Gln Lys
 355 360 365

Ala Arg Gln Thr Leu Glu Phe Tyr Ser Cys Thr Ser Glu Glu Ile Asp
 370 375 380

His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
 385 390 395 400

Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile
 405 410 415

Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
 420 425 430

Met Thr Thr Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
 435 440 445

Gln Val Glu Phe Lys Ala Met Asn Ala Lys Leu Leu Met Asp Pro Lys
 450 455 460

Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Thr Ala Ile Asp Glu Leu
 465 470 475 480

Leu Gln Ala Leu Asn Val Asn Ser Val Thr Val Pro Gln Asn Ser Ser
 485 490 495

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
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Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Met Met Ser
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Tyr Leu Asn Ala Ser
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<213> Felis catus

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ctgtggcaca gtcacactgt tgacattcag ggctgtaac agctcatcaa tagctgtcag 180
catgttttga tccagaaaga tctgcctttt aggatccatt aacagctttg cattcatggc 240
cttgaactcc acctggtaca tcttcaagtc ctcatagata ctgctaaggc acaggggtcgt 300
cataaaagag gtctttcttg aggccaggca actccatta gttatcagag agatctctct 360
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tgctcacat tttagaaaga tcttattttt ggattctttc tgttccctta agatatcagt 1260
ggaccaaatt ccactcttct ttttgtgtat caggaggaac gaatggctca gaacctcgcc 1320
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aggagtattg caggtgagga ccaccatttc tccgggggca tcagggtgcc agtccaactc 1500
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<212> DNA
<213> Felis catus

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aagactcaaa ttgtatctta tcatcatgtc ctggaacact tctctgaaag aatatgatgt 180
catttccttc atcattgata ctctcaggag gactcatttc cttaaaggaa ataattttgt 240
tctcacagga gagagtagac atggtcttat aattcacaga gatggttact gccagacctc 300
tagtgaggct atctttatac atatatatga taaattcagt ccgggggtgca ttatctgtac 360
agtcagaatc aggcatatcc tcaaacacag gttgatctcc ctgggtaatg aagagaactt 420
ggtcgttcaa gtttcgtaag attgagagtt tatgttcaag cttgccaaag taatctgttt 480
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caaagttgat gcaatcatct actggtatag cagtca 576

<210> 42
<211> 0
<212> DNA
<213> Felis catus

<400> 42
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<210> 43
<211> 1533
<212> DNA
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<220>
<221> CDS
<222> (1)..(1533)

<400> 43
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Ile Trp Glu Leu Glu Lys Asn Val Tyr Val Val Glu Leu Asp Trp His
1 5 10 15

| | |
|---|-----|
| cct gat gcc ccc gga gaa atg gtg gtc ctc acc tgc aat act cct gaa Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asn Thr Pro Glu 20 25 30 | 96 |
| gaa gat gac atc acc tgg acc tct gac cag agc agt gaa gtc cta ggc Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln Ser Ser Glu Val Leu Gly 35 40 45 | 144 |
| tct ggt aaa act ctg acc atc caa gtc aaa gaa ttt gca gat gct ggc Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Ala Asp Ala Gly 50 55 60 | 192 |
| cag tat acc tgt cat aaa gga ggc gag gtt ctg agc cat tcg ttc ctc Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Phe Leu 65 70 75 80 | 240 |
| ctg ata cac aaa aag gaa gat gga att tgg tcc act gat atc tta agg Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Arg 85 90 95 | 288 |
| gaa cag aaa gaa tcc aaa aat aag atc ttt cta aaa tgt gag gca aag Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys 100 105 110 | 336 |
| aat tat tct gga cgt ttc acc tgc tgg tgg ctg acg gca atc agt acc Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr 115 120 125 | 384 |
| gat ttg aaa ttc act gtc aaa agc agc aga ggc tcc tct gac ccc caa Asp Leu Lys Phe Thr Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln 130 135 140 | 432 |
| gag gtg act tgt gga gca gcg aca ctc tca gca gag aag gtc aga gtg Glu Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Lys Val Arg Val 145 150 155 160 | 480 |
| gac aac agg gat tat aag aag tac aca gtg gag tgt cag gag ggc agt Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser 165 170 175 | 528 |
| gcc tgc ccg gct gcc gag gag agc cta ccc att gaa gtc gtg gtg gac Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp 180 185 190 | 576 |
| gct att cac aag ctc aag tac gaa aac tac acc agc agc ttc ttc atc Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile 195 200 205 | 624 |
| agg gac atc atc aaa ccg gac cca ccc aag aac ctg caa ctg aag cca Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro 210 215 220 | 672 |
| tta aaa aat tct cgg cat gtg gaa gtg agc tgg gaa tac cct gac acc Leu Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr 225 230 235 240 | 720 |

| | |
|---|------|
| tgg agc acc cca cat tcc tac ttc tcc tta aca ttt ggc gta cag gtc | 768 |
| Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Gly Val Gln Val | |
| 245 250 255 | |
| cag ggc aag aac aac aga gaa aag aaa gac aga ctc tcc gtg gac aag | 816 |
| Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Ser Val Asp Lys | |
| 260 265 270 | |
| acc tca gcc aag gtc gtg tgc cac aag gat gcc aag atc cgc gtg caa | 864 |
| Thr Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln | |
| 275 280 285 | |
| gcc aga gac cgc tac tat agc tca tcc tgg agc aac tgg gca tcc gtg | 912 |
| Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asn Trp Ala Ser Val | |
| 290 295 300 | |
| tcc tgc agt ggt ggc ggt ggc ggc gga tct aga aac ttg cca acc cct | 960 |
| Ser Cys Ser Gly Gly Gly Gly Gly Gly Ser Arg Asn Leu Pro Thr Pro | |
| 305 310 315 320 | |
| act cca tcc ccg ggg atg ttc cag tgc ctc aac cac tcc caa acc ctg | 1008 |
| Thr Pro Ser Pro Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu | |
| 325 330 335 | |
| ctg cga gcc atc agc aac acg ctt cag aag gcc aga caa act cta gaa | 1056 |
| Leu Arg Ala Ile Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu | |
| 340 345 350 | |
| ttt tac tcc tgc act tcc gaa gag att gat cat gaa gat atc aca aaa | 1104 |
| Phe Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys | |
| 355 360 365 | |
| gat aaa acc agc aca gtg gag gcc tgc tta cca ctg gaa tta acc atg | 1152 |
| Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met | |
| 370 375 380 | |
| aat gag agt tgc ctg gct tcc aga gag atc tct ctg ata act aat ggg | 1200 |
| Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly | |
| 385 390 395 400 | |
| agt tgc ctg gcc tcc aga aag acc tct ttt atg acg acc ctg tgc ctt | 1248 |
| Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Thr Thr Leu Cys Leu | |
| 405 410 415 | |
| agc agt atc tat gag gac ttg aag atg tac cag gtg gag ttc aag gcc | 1296 |
| Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Ala | |
| 420 425 430 | |
| atg aat gca aag ctg tta atg gat cct aaa agg cag atc ttt ctg gat | 1344 |
| Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp | |
| 435 440 445 | |
| caa aac atg ctg aca gct att gat gag ctg tta cag gcc ctg aat gtc | 1392 |
| Gln Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Val | |
| 450 455 460 | |
| aac agt gtg act gtg cca cag aac tcc tcc ttg gaa gaa ccg gat ttt | 1440 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|
| Asn | Ser | Val | Thr | Val | Pro | Gln | Asn | Ser | Ser | Leu | Glu | Glu | Pro | Asp | Phe | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | |
| tat | aaa | act | aaa | atc | aag | ctc | tgc | ata | ctt | ctt | cat | gct | ttc | aga | att | | 1488 |
| Tyr | Lys | Thr | Lys | Ile | Lys | Leu | Cys | Ile | Leu | Leu | His | Ala | Phe | Arg | Ile | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | |
| cgt | gca | gtg | acc | atc | aat | aga | atg | atg | agc | tat | ctg | aat | gct | tcc | | | 1533 |
| Arg | Ala | Val | Thr | Ile | Asn | Arg | Met | Met | Ser | Tyr | Leu | Asn | Ala | Ser | | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | |

<210> 44
 <211> 511
 <212> PRT
 <213> Felis catus

 <400> 44

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Ile | Trp | Glu | Leu | Glu | Lys | Asn | Val | Tyr | Val | Val | Glu | Leu | Asp | Trp | His | | |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | | | |
| Pro | Asp | Ala | Pro | Gly | Glu | Met | Val | Val | Leu | Thr | Cys | Asn | Thr | Pro | Glu | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| Glu | Asp | Asp | Ile | Thr | Trp | Thr | Ser | Asp | Gln | Ser | Ser | Glu | Val | Leu | Gly | | |
| | 35 | | | | | | 40 | | | | | 45 | | | | | |
| Ser | Gly | Lys | Thr | Leu | Thr | Ile | Gln | Val | Lys | Glu | Phe | Ala | Asp | Ala | Gly | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | |
| Gln | Tyr | Thr | Cys | His | Lys | Gly | Gly | Glu | Val | Leu | Ser | His | Ser | Phe | Leu | | |
| 65 | | | | 70 | | | | 75 | | | | | | | 80 | | |
| Leu | Ile | His | Lys | Lys | Glu | Asp | Gly | Ile | Trp | Ser | Thr | Asp | Ile | Leu | Arg | | |
| | | | 85 | | | | | 90 | | | | | | 95 | | | |
| Glu | Gln | Lys | Glu | Ser | Lys | Asn | Lys | Ile | Phe | Leu | Lys | Cys | Glu | Ala | Lys | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Asn | Tyr | Ser | Gly | Arg | Phe | Thr | Cys | Trp | Trp | Leu | Thr | Ala | Ile | Ser | Thr | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Asp | Leu | Lys | Phe | Thr | Val | Lys | Ser | Ser | Arg | Gly | Ser | Ser | Asp | Pro | Gln | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Glu | Val | Thr | Cys | Gly | Ala | Ala | Thr | Leu | Ser | Ala | Glu | Lys | Val | Arg | Val | | |
| 145 | | | | 150 | | | | | | 155 | | | | | 160 | | |

Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser
 165 170 175
 Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp
 180 185 190
 Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile
 195 200 205
 Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro
 210 215 220
 Leu Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr
 225 230 235 240
 Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Gly Val Gln Val
 245 250 255
 Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Ser Val Asp Lys
 260 265 270
 Thr Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln
 275 280 285
 Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asn Trp Ala Ser Val
 290 295 300
 Ser Cys Ser Gly Gly Gly Gly Gly Gly Ser Arg Asn Leu Pro Thr Pro
 305 310 315 320
 Thr Pro Ser Pro Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu
 325 330 335
 Leu Arg Ala Ile Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu
 340 345 350
 Phe Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys
 355 360 365
 Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met
 370 375 380

Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly
 385 390 395 400

Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Thr Thr Leu Cys Leu
 405 410 415

Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Ala
 420 425 430

Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp
 435 440 445

Gln Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Val
 450 455 460

Asn Ser Val Thr Val Pro Gln Asn Ser Ser Leu Glu Glu Pro Asp Phe
 465 470 475 480

Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile
 485 490 495

Arg Ala Val Thr Ile Asn Arg Met Met Ser Tyr Leu Asn Ala Ser
 500 505 510

<210> 45
 <211> 1533
 <212> DNA
 <213> Felis catus

<400> 45
 ggaagcattc agatagctca tcattctatt gatggtcact gcacgaattc tgaaagcatg 60
 aagaagtatg cagagcttga ttttagtttt ataaaaatcc ggttcttcca aggaggagtt 120
 ctgtggcaca gtcacactgt tgacattcag ggctgtaac agctcatcaa tagctgtcag 180
 catgttttga tccagaaaga tctgcctttt aggatccatt aacagctttg cattcatggc 240
 cttgaactcc acctggtaca tcttcaagtc ctcatagata ctgctaaggc acagggctcgt 300
 cataaaagag gtctttctgg aggccaggca actcccatta gttatcagag agatctctct 360
 ggaagccagg caactctcat tcatggttaa ttccagtggc aagcaggcct cactgtgct 420
 ggttttatct tttgtgatat cttcatgac aatctcttcg gaagtgcagg agtaaaattc 480
 tagagtttgt ctggccttct gaagcgtggt gctgatggct cgcagcaggg tttgggagtg 540

```

gttgaggcac tggaacatcc ccgggggatgg agtaggggtt ggcaagtttc tagatccgcc      600
gccaccgcca ccactgcagg acacgggatgc ccagttgctc caggatgagc tatagtagcg      660
gtctctggct tgcacgcgga tcttggcate cttgtggcac acgaccttgg ctgaggtctt      720
gtccacggag agtctgtctt tcttttctct gttgttcttg ccctggacct gtacgcaaaa      780
tgttaaggag aagtaggaat gtgggggtgct ccaggtgtca gggatttccc agctcacttc      840
cacatgccga gaatttttta atggcttcag ttgcagggtc ttgggtgggt ccggtttgat      900
gatgtccctg atgaagaagc tgctgggtgta gttttcgtag ttgagcttgt gaatagcgtc      960
caccacgact tcaatgggta ggctctctc gccagccggg caggcactgc cctcctgaca     1020
ctccactgtg tacttcttat aatccctgtt gtccactctg accttctctg ctgagagtgt     1080
cgctgctcca caagtcacct cttgggggtc agaggagcct ctgctgcttt tgacagtga      1140
tttcaaatcg gtactgattg ccgtcagcca ccagcaggtg aaacgtccag aataattctt     1200
tgcctcacat tttagaaaga tcttattttt ggattctttc tgttccctta agatatcagt     1260
ggaccaaatt ccactcttct ttttgtgtat caggaggaac gaatggctca gaacctcgcc     1320
tcctttatga caggtatact ggccagcacc tgcaaattct ttgacttgga tggtcagagt     1380
tttaccagag cctaggactt cactgctctg gtcagaggtc caggatgatgt catcttcttc     1440
aggagtattg caggtgagga ccaccatttc tccgggggca tcagggtgcc agtccaactc     1500
tacaacataa acgtttttct ccagttccca tat                                     1533

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```

<210> 46
<211> 666
<212> DNA
<213> Canis familiaris

```

```

<220>
<221> CDS
<222> (1)..(666)

```

```

<400> 46
atg tgc ccg ccg cgc ggc ctc ctc ctt gtg acc atc ctg gtc ctg cta      48
Met Cys Pro Pro Arg Gly Leu Leu Leu Val Thr Ile Leu Val Leu Leu
1          5          10          15

agc cac ctg gac cac ctt act tgg gcc agg agc ctc ccc aca gcc tca      96
Ser His Leu Asp His Leu Thr Trp Ala Arg Ser Leu Pro Thr Ala Ser
          20          25          30

ccg agc cca gga ata ttc cag tgc ctc aac cac tcc caa aac ctg ctg     144
Pro Ser Pro Gly Ile Phe Gln Cys Leu Asn His Ser Gln Asn Leu Leu
          35          40          45

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| | |
|---|-----|
| aga gcc gtc agc aac acg ctt cag aag gcc aga caa act cta gaa tta | 192 |
| Arg Ala Val Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Leu | |
| 50 55 60 | |
| tat tcc tgc act tcc gaa gag att gat cat gaa gat atc aca aag gat | 240 |
| Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp | |
| 65 70 75 80 | |
| aaa acc agc aca gtg gag gcc tgc tta cca ctg gaa tta acc atg aat | 288 |
| Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn | |
| 85 90 95 | |
| gag agt tgc ctg gct tcc aga gag atc tct ttg ata act aac ggg agt | 336 |
| Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser | |
| 100 105 110 | |
| tgc ctg gcc tct gga aag gcc tct ttt atg acg gtc ctg tgc ctt agc | 384 |
| Cys Leu Ala Ser Gly Lys Ala Ser Phe Met Thr Val Leu Cys Leu Ser | |
| 115 120 125 | |
| agc atc tat gag gac ttg aag atg tac cag atg gaa ttc aag gcc atg | 432 |
| Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Met Glu Phe Lys Ala Met | |
| 130 135 140 | |
| aac gca aag ctt tta atg gat ccc aag agg cag atc ttt ctg gat caa | 480 |
| Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln | |
| 145 150 155 160 | |
| aac atg ctg aca gct atc gat gag ctg tta cag gcc ctg aat ttc aac | 528 |
| Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Phe Asn | |
| 165 170 175 | |
| agt gtg act gtg cca cag aaa tcc tcc ctt gaa gag ccg gat ttt tat | 576 |
| Ser Val Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr | |
| 180 185 190 | |
| aaa act aaa atc aag ctc tgc ata ctt ctt cat gct ttc aga att cgt | 624 |
| Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg | |
| 195 200 205 | |
| gcg gtg acc atc gat aga atg atg agt tat ctg aat tct tcc | 666 |
| Ala Val Thr Ile Asp Arg Met Met Ser Tyr Leu Asn Ser Ser | |
| 210 215 220 | |

<210> 47
 <211> 222
 <212> PRT
 <213> Canis familiaris

<400> 47

| |
|---|
| Met Cys Pro Pro Arg Gly Leu Leu Leu Val Thr Ile Leu Val Leu Leu |
| 1 5 10 15 |

Ser His Leu Asp His Leu Thr Trp Ala Arg Ser Leu Pro Thr Ala Ser
20 25 30

Pro Ser Pro Gly Ile Phe Gln Cys Leu Asn His Ser Gln Asn Leu Leu
35 40 45

Arg Ala Val Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Leu
50 55 60

Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp
65 70 75 80

Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn
85 90 95

Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser
100 105 110

Cys Leu Ala Ser Gly Lys Ala Ser Phe Met Thr Val Leu Cys Leu Ser
115 120 125

Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Met Glu Phe Lys Ala Met
130 135 140

Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln
145 150 155 160

Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Phe Asn
165 170 175

Ser Val Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr
180 185 190

Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg
195 200 205

Ala Val Thr Ile Asp Arg Met Met Ser Tyr Leu Asn Ser Ser
210 215 220

<210> 48
<211> 666
<212> DNA
<213> Canis familiaris

```

<400> 48
ggaagaattc agataactca tcattctatc gatggtcacc gcacgaattc tgaaagcatg      60
aagaagtatg cagagcttga ttttagtttt ataaaaatcc ggctcttcaa gggaggattt      120
ctgtggcaca gtcacactgt tgaaattcag ggctgtaac agctcatcga tagctgtcag      180
catgttttga tccagaaaga tctgcctctt gggatccatt aaaagctttg cgttcatggc      240
cttgaattcc atctggtaca tcttcaagtc ctcatagatg ctgctaaggc acaggaccgt      300
cataaaagag gcctttccag aggccaggca actcccgtta gttatcaaag agatctctct      360
ggaagccagg caactctcat tcatgggttaa ttccagtggg aagcaggcct ccactgtgct      420
ggttttatcc tttgtgatat cttcatgac aatctcttcg gaagtgcagg aatataattc      480
tagagtttgt ctggccttct gaagcgtggt gctgacggct ctgagcaggt tttgggagtg      540
gttgaggcac tggaatatcc ctgggctcgg tgaggctgtg gggaggctcc tggcccaagt      600
aaggtggtcc aggtggctta gcaggaccag gatggtcaca aggaggaggc cgcgcggcgg      660
gcacat                                                                    666

```

```

<210> 49
<211> 591
<212> DNA
<213> Canis familiaris

```

```

<220>
<221> CDS
<222> (1)..(591)

```

```

<400> 49
agg agc ctc ccc aca gcc tca ccg agc cca gga ata ttc cag tgc ctc      48
Arg Ser Leu Pro Thr Ala Ser Pro Ser Pro Gly Ile Phe Gln Cys Leu
1          5          10          15

aac cac tcc caa aac ctg ctg aga gcc gtc agc aac acg ctt cag aag      96
Asn His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Thr Leu Gln Lys
          20          25          30

gcc aga caa act cta gaa tta tat tcc tgc act tcc gaa gag att gat      144
Ala Arg Gln Thr Leu Glu Leu Tyr Ser Cys Thr Ser Glu Glu Ile Asp
          35          40          45

cat gaa gat atc aca aag gat aaa acc agc aca gtg gag gcc tgc tta      192
His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
          50          55          60

cca ctg gaa tta acc atg aat gag agt tgc ctg gct tcc aga gag atc      240
Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile
65          70          75          80

```

| | |
|---|-----|
| tct ttg ata act aac ggg agt tgc ctg gcc tct gga aag gcc tct ttt | 288 |
| Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala Ser Gly Lys Ala Ser Phe | |
| 85 90 95 | |
| atg acg gtc ctg tgc ctt agc agc atc tat gag gac ttg aag atg tac | 336 |
| Met Thr Val Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr | |
| 100 105 110 | |
| cag atg gaa ttc aag gcc atg aac gca aag ctt tta atg gat ccc aag | 384 |
| Gln Met Glu Phe Lys Ala Met Asn Ala Lys Leu Leu Met Asp Pro Lys | |
| 115 120 125 | |
| agg cag atc ttt ctg gat caa aac atg ctg aca gct atc gat gag ctg | 432 |
| Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Thr Ala Ile Asp Glu Leu | |
| 130 135 140 | |
| tta cag gcc ctg aat ttc aac agt gtg act gtg cca cag aaa tcc tcc | 480 |
| Leu Gln Ala Leu Asn Phe Asn Ser Val Thr Val Pro Gln Lys Ser Ser | |
| 145 150 155 160 | |
| ctt gaa gag ccg gat ttt tat aaa act aaa atc aag ctc tgc ata ctt | 528 |
| Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu | |
| 165 170 175 | |
| ctt cat gct ttc aga att cgt gcg gtg acc atc gat aga atg atg agt | 576 |
| Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Met Met Ser | |
| 180 185 190 | |
| tat ctg aat tct tcc | 591 |
| Tyr Leu Asn Ser Ser | |
| 195 | |

<210> 50
 <211> 197
 <212> PRT
 <213> Canis familiaris

<400> 50

| | |
|---|--|
| Arg Ser Leu Pro Thr Ala Ser Pro Ser Pro Gly Ile Phe Gln Cys Leu | |
| 1 5 10 15 | |
| Asn His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Thr Leu Gln Lys | |
| 20 25 30 | |
| Ala Arg Gln Thr Leu Glu Leu Tyr Ser Cys Thr Ser Glu Glu Ile Asp | |
| 35 40 45 | |
| His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu | |
| 50 55 60 | |
| Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | 70 | | 75 | | 80 | | | | | | | | | |
| Ser | Leu | Ile | Thr | Asn | Gly | Ser | Cys | Leu | Ala | Ser | Gly | Lys | Ala | Ser | Phe |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Met | Thr | Val | Leu | Cys | Leu | Ser | Ser | Ile | Tyr | Glu | Asp | Leu | Lys | Met | Tyr |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Gln | Met | Glu | Phe | Lys | Ala | Met | Asn | Ala | Lys | Leu | Leu | Met | Asp | Pro | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Arg | Gln | Ile | Phe | Leu | Asp | Gln | Asn | Met | Leu | Thr | Ala | Ile | Asp | Glu | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Leu | Gln | Ala | Leu | Asn | Phe | Asn | Ser | Val | Thr | Val | Pro | Gln | Lys | Ser | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Leu | Glu | Glu | Pro | Asp | Phe | Tyr | Lys | Thr | Lys | Ile | Lys | Leu | Cys | Ile | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Leu | His | Ala | Phe | Arg | Ile | Arg | Ala | Val | Thr | Ile | Asp | Arg | Met | Met | Ser |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Tyr | Leu | Asn | Ser | Ser | | | | | | | | | | | |
| | | 195 | | | | | | | | | | | | | |

<210> 51
 <211> 591
 <212> DNA
 <213> Canis familiaris

| | |
|---|-----|
| <400> 51 | |
| ggaagaattc agataactca tcattctatc gatggtcacc gcacgaattc tgaaagcatg | 60 |
| aagaagtatg cagagcttga ttttagtttt ataaaaatcc ggctcttcaa gggaggattt | 120 |
| ctgtggcaca gtcacactgt tgaaattcag ggcttgtaac agctcatcga tagctgtcag | 180 |
| catgttttga tccagaaaga tctgcctctt gggatccatt aaaagctttg cgttcatggc | 240 |
| cttgaattcc atctggtaca tcttcaagtc ctcatagatg ctgctaaggc acaggaccgt | 300 |
| cataaaagag gcctttccag aggccaggca actcccgtta gttatcaaag agatctctct | 360 |
| ggaagccagg caactctcat tcatggttaa ttccagtggg aagcaggcct ccactgtgct | 420 |
| ggttttatcc tttgtgatat cttcatgatc aatctcttcg gaagtgcagg aatataattc | 480 |

tagagtttgt ctggccttct gaagcgtgtt gctgacggct ctcagcaggt tttgggagtg 540
gttgaggcac tggaatatct ctgggctcgg tgaggctgtg gggaggctcc t 591

<210> 52
<211> 921
<212> DNA
<213> Canis familiaris

<220>
<221> CDS
<222> (1)..(921)

<400> 52
ata tgg gaa ctg gag aaa gat gtt tat gtt gta gag ttg gac tgg cac 48
Ile Trp Glu Leu Glu Lys Asp Val Tyr Val Val Glu Leu Asp Trp His
1 5 10 15
cct gat gcc ccc gga gaa atg gtg gtc ctc acc tgc cat acc cct gaa 96
Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys His Thr Pro Glu
20 25 30
gaa gat gac atc act tgg acc tca gcg cag agc agt gaa gtc cta ggt 144
Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln Ser Ser Glu Val Leu Gly
35 40 45
tct ggt aaa act ctg acc atc caa gtc aaa gaa ttt gga gat gct ggc 192
Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly
50 55 60
cag tat acc tgc cat aaa gga ggc aag gtt ctg agc cgc tca ctc ctg 240
Gln Tyr Thr Cys His Lys Gly Gly Lys Val Leu Ser Arg Ser Leu Leu
65 70 75 80
ttg att cac aaa aaa gaa gat gga att tgg tcc act gat atc tta aag 288
Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
85 90 95
gaa cag aaa gaa tcc aaa aat aag atc ttt ctg aaa tgt gag gca aag 336
Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys
100 105 110
aat tat tct gga cgt ttc aca tgc tgg tgg ctg acg gca atc agt act 384
Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr
115 120 125
gat ttg aaa ttc agt gtc aaa agt agc aga ggc ttc tct gac ccc caa 432
Asp Leu Lys Phe Ser Val Lys Ser Ser Arg Gly Phe Ser Asp Pro Gln
130 135 140
ggg gtg aca tgt gga gca gtg aca ctt tca gca gag agg gtc aga gtg 480
Gly Val Thr Cys Gly Ala Val Thr Leu Ser Ala Glu Arg Val Arg Val
145 150 155 160
gac aac agg gat tat aag aag tac aca gtg gag tgt cag gag ggc agt 528

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Asn | Arg | Asp | Tyr | Lys | Lys | Tyr | Thr | Val | Glu | Cys | Gln | Glu | Gly | Ser | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| gcc | tgc | ccc | tct | gcc | gag | gag | agc | cta | ccc | atc | gag | gtc | gtg | gtg | gat | 576 | |
| Ala | Cys | Pro | Ser | Ala | Glu | Glu | Ser | Leu | Pro | Ile | Glu | Val | Val | Val | Asp | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| gct | att | cac | aag | ctc | aag | tat | gaa | aac | tac | acc | agc | agc | ttc | ttc | atc | 624 | |
| Ala | Ile | His | Lys | Leu | Lys | Tyr | Glu | Asn | Tyr | Thr | Ser | Ser | Phe | Phe | Ile | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| aga | gac | atc | atc | aaa | cca | gac | cca | ccc | aca | aac | ctg | cag | ctg | aag | cca | 672 | |
| Arg | Asp | Ile | Ile | Lys | Pro | Asp | Pro | Pro | Thr | Asn | Leu | Gln | Leu | Lys | Pro | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| ttg | aaa | aat | tct | cgg | cac | gtg | gag | gtc | agc | tgg | gaa | tac | ccc | gac | acc | 720 | |
| Leu | Lys | Asn | Ser | Arg | His | Val | Glu | Val | Ser | Trp | Glu | Tyr | Pro | Asp | Thr | | |
| 225 | | | | 230 | | | | | 235 | | | | | | 240 | | |
| tgg | agc | acc | cca | cat | tcc | tac | ttc | tcc | ctg | aca | ttt | tgc | ata | cag | gcc | 768 | |
| Trp | Ser | Thr | Pro | His | Ser | Tyr | Phe | Ser | Leu | Thr | Phe | Cys | Ile | Gln | Ala | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| cag | ggc | aag | aac | aat | aga | gaa | aag | aaa | gat | aga | ctc | tgc | gtg | gac | aag | 816 | |
| Gln | Gly | Lys | Asn | Asn | Arg | Glu | Lys | Lys | Asp | Arg | Leu | Cys | Val | Asp | Lys | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| acc | tca | gcc | aag | gtc | gtg | tgc | cac | aag | gat | gcc | aag | atc | cgc | gtg | caa | 864 | |
| Thr | Ser | Ala | Lys | Val | Val | Cys | His | Lys | Asp | Ala | Lys | Ile | Arg | Val | Gln | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | |
| gcc | cga | gac | cgc | tac | tat | agt | tca | tcc | tgg | agc | gac | tgg | gca | tct | gtg | 912 | |
| Ala | Arg | Asp | Arg | Tyr | Tyr | Ser | Ser | Ser | Trp | Ser | Asp | Trp | Ala | Ser | Val | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | |
| tcc | tgc | agt | | | | | | | | | | | | | | 921 | |
| Ser | Cys | Ser | | | | | | | | | | | | | | | |
| 305 | | | | | | | | | | | | | | | | | |

<210> 53
 <211> 307
 <212> PRT
 <213> Canis familiaris

<400> 53

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Trp | Glu | Leu | Glu | Lys | Asp | Val | Tyr | Val | Val | Glu | Leu | Asp | Trp | His |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Ala | Pro | Gly | Glu | Met | Val | Val | Leu | Thr | Cys | His | Thr | Pro | Glu |
| | | 20 | | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Asp | Ile | Thr | Trp | Thr | Ser | Ala | Gln | Ser | Ser | Glu | Val | Leu | Gly |
| | 35 | | | | | | 40 | | | | | 45 | | | |

Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly
 50 55 60

Gln Tyr Thr Cys His Lys Gly Gly Lys Val Leu Ser Arg Ser Leu Leu
 65 70 75 80

Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
 85 90 95

Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys
 100 105 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr
 115 120 125

Asp Leu Lys Phe Ser Val Lys Ser Ser Arg Gly Phe Ser Asp Pro Gln
 130 135 140

Gly Val Thr Cys Gly Ala Val Thr Leu Ser Ala Glu Arg Val Arg Val
 145 150 155 160

Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser
 165 170 175

Ala Cys Pro Ser Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp
 180 185 190

Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile
 195 200 205

Arg Asp Ile Ile Lys Pro Asp Pro Pro Thr Asn Leu Gln Leu Lys Pro
 210 215 220

Leu Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr
 225 230 235 240

Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Ile Gln Ala
 245 250 255

Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Cys Val Asp Lys
 260 265 270

Thr Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln
 275 280 285

Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asp Trp Ala Ser Val
 290 295 300

Ser Cys Ser
 305

<210> 54
 <211> 921
 <212> DNA
 <213> Canis familiaris

<400> 54
 actgcaggac acagatgccc agtcgctcca ggatgaacta tagtagcggg ctcgggcttg 60
 cacgcggatc ttggcaccct tgtggcacac gaccttggct gaggtccttg ccacgcagag 120
 tctatctttc ttttctctat tgttcttgcc ctgggctgt atgcaaatg tcagggagaa 180
 gtaggaatgt ggggtgctcc aggtgtcggg gtattcccag ctgacctcca cgtgccgaga 240
 atttttcaat ggcttcagct gcaggtttgt ggggtgggtct ggtttgatga tgtctctgat 300
 gaagaagctg ctgggtgtagt tttcatactt gagcttgtga atagcatcca ccacgacctc 360
 gatgggtagg ctctcctcgg cagaggggca ggcactgccc tctgacact cactgtgta 420
 cttcttataa tccctgttgt cactctgac cctctctgct gaaagtgtca ctgctccaca 480
 tgtcacccct tgggggtcag agaagcctct gctacttttg aactgaatt tcaaatcagt 540
 actgattgcc gtcagccacc agcatgtgaa acgtccagaa taattctttg cctcacattt 600
 cagaaagatc ttatttttgg attctttctg ttcctttaag atatcagtgg accaaattcc 660
 atcttctttt ttgtgaatca acaggagtga gcggtcaga accttgctc ctttatggca 720
 ggtatactgg ccagcatctc caaattcttt gacttggatg gtcagagttt taccagaacc 780
 taggacttca ctgctctcgg ctgagggtcca agtgatgtca tcttcttcag gggtatggca 840
 ggtgaggacc accatttctc cgggggcac aggggtgccag tccaactcta caacataaac 900
 atctttctcc agttcccata t 921

<210> 55
 <211> 985
 <212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (1)..(984)

<400> 55

| | |
|---|-----|
| atg cat cct cag cag ttg gtc atc gcc tgg ttt tcc ctg gtt ttg ctg | 48 |
| Met His Pro Gln Gln Leu Val Ile Ala Trp Phe Ser Leu Val Leu Leu | |
| 1 5 10 15 | |
| gca cct ccc ctc atg gcc ata tgg gaa ctg gag aaa aac gtt tat gtt | 96 |
| Ala Pro Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asn Val Tyr Val | |
| 20 25 30 | |
| gta gag ttg gac tgg cac cct gat gcc ccc gga gaa atg gtg gtc ctc | 144 |
| Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu | |
| 35 40 45 | |
| acc tgc aat act cct gaa gaa gat gac atc acc tgg acc tct gac cag | 192 |
| Thr Cys Asn Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln | |
| 50 55 60 | |
| agc agt gaa gtc cta ggc tct ggt aaa act ctg acc atc caa gtc aaa | 240 |
| Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys | |
| 65 70 75 80 | |
| gaa ttt gca gat gct ggc cag tat acc tgt cat aaa gga ggc gag gtt | 288 |
| Glu Phe Ala Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val | |
| 85 90 95 | |
| ctg agc cat tcg ttc ctc ctg ata cac aaa aag gaa gat gga att tgg | 336 |
| Leu Ser His Ser Phe Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp | |
| 100 105 110 | |
| tcc act gat atc tta agg gaa cag aaa gaa tcc aaa aat aag atc ttt | 384 |
| Ser Thr Asp Ile Leu Arg Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe | |
| 115 120 125 | |
| cta aaa tgt gag gca aag aat tat tct gga cgt ttc acc tgc tgg tgg | 432 |
| Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp | |
| 130 135 140 | |
| ctg acg gca atc agt acc gat ttg aaa ttc act gtc aaa agc agc aga | 480 |
| Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Thr Val Lys Ser Ser Arg | |
| 145 150 155 160 | |
| ggc tcc tct gac ccc caa ggg gtg act tgt gga gca gcg aca ctc tca | 528 |
| Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser | |
| 165 170 175 | |
| gca gag aag gtc aga gtg gac aac agg gat tat aag aag tac aca gtg | 576 |
| Ala Glu Lys Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val | |
| 180 185 190 | |
| gag tgt cag gag ggc agt gcc tgc ccg gct gcc gag gag agc cta ccc | 624 |
| Glu Cys Gln Glu Gly Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro | |
| 195 200 205 | |

| | |
|---|-----|
| att gaa gtc gtg gtg gac gct att cac aag ctc aag tac gaa aac tac | 672 |
| Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr | |
| 210 215 220 | |
| | |
| acc agc agc ttc ttc atc agg gac atc atc aaa ccg gac cca ccc aag | 720 |
| Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys | |
| 225 230 235 240 | |
| | |
| aac ctg caa ctg aag cca tta aaa aat tct cgg cat gtg gaa gtg agc | 768 |
| Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser | |
| 245 250 255 | |
| | |
| tgg gaa tac cct gac acc tgg agc acc cca cat tcc tac ttc tcc tta | 816 |
| Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu | |
| 260 265 270 | |
| | |
| aca ttt ggc gta cag gtc cag ggc aag aac aac aga gaa aag aaa gac | 864 |
| Thr Phe Gly Val Gln Val Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp | |
| 275 280 285 | |
| | |
| aga ctc tcc gtg gac aag acc tca gcc aag gtc gtg tgc cac aag gat | 912 |
| Arg Leu Ser Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp | |
| 290 295 300 | |
| | |
| gcc aag atc cgc gtg caa gcc aga gac cgc tac tat agc tca tcc tgg | 960 |
| Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp | |
| 305 310 315 320 | |
| | |
| agc aac tgg gca tcc gtg tcc tgc a | 985 |
| Ser Asn Trp Ala Ser Val Ser Cys | |
| 325 | |

<210> 56
 <211> 328
 <212> PRT
 <213> Felis catus

<400> 56

| | |
|---|--|
| Met His Pro Gln Gln Leu Val Ile Ala Trp Phe Ser Leu Val Leu Leu | |
| 1 5 10 15 | |
| | |
| Ala Pro Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asn Val Tyr Val | |
| 20 25 30 | |
| | |
| Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu | |
| 35 40 45 | |
| | |
| Thr Cys Asn Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Asp Gln | |
| 50 55 60 | |

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
 65 70 75 80
 Glu Phe Ala Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
 85 90 95
 Leu Ser His Ser Phe Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp
 100 105 110
 Ser Thr Asp Ile Leu Arg Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe
 115 120 125
 Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140
 Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Thr Val Lys Ser Ser Arg
 145 150 155 160
 Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
 165 170 175
 Ala Glu Lys Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val
 180 185 190
 Glu Cys Gln Glu Gly Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro
 195 200 205
 Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr
 210 215 220
 Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
 225 230 235 240
 Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser
 245 250 255
 Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
 260 265 270
 Thr Phe Gly Val Gln Val Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp
 275 285
 Arg Leu Ser Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp

290

295

300

Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp
 305 310 315 320

Ser Asn Trp Ala Ser Val Ser Cys
 325

<210> 57
 <211> 985
 <212> DNA
 <213> Felis catus

<400> 57
 tgcaggacac ggatgccag ttgctccagg atgagctata gtagcggctct ctggcttgca 60
 cgcggatcctt ggcatacctt tggcacacga ccttggctga ggtcttgtcc acggagagtc 120
 tgtctttctt ttctctgttg ttcttgccct ggacctgtac gccaaatgtt aaggagaagt 180
 aggaatgtgg ggtgctccag gtgtcagggt attcccagct cacttccaca tgccgagaat 240
 tttttaatgg cttcagttgc aggttcttgg gtgggtccgg tttgatgatg tccctgatga 300
 agaagctgct ggtgtagttt tcgtacttga gcttgtgaat agcgtccacc acgacttcaa 360
 tgggtaggct ctctcggca gccgggcagg cactgccctc ctgacactcc actgtgtact 420
 tcttataatc cctgttgtcc actctgacct tctctgctga gagtgtcgtc gctccacaag 480
 tcaccccttg ggggtcagag gagcctctgc tgcttttgac agtgaatttc aaatcggtac 540
 tgattgccgt cagccaccag caggtgaaac gtccagaata attctttgcc tcacatttta 600
 gaaagatcctt atttttggat tctttctgtt cccttaagat atcagtggac caaattccat 660
 cttccttttt gtgtatcagg aggaacgaat ggctcagaac ctgcctcctt ttatgacagg 720
 tatactggcc agcatctgca aattctttga cttggatggc cagagtttta ccagagccta 780
 ggacttcact gctctggcca gaggtccagg tgatgtcatc ttcttcagga gtattgcagg 840
 tgaggaccac catttctccg ggggcacag ggtgccagtc caactctaca acataaacgt 900
 ttttctccag ttcccatatg gccatgaggg gaggtgccag caaaaccagg gaaaaccagg 960
 cgatgaccaa ctgctgagga tgcatt 985

<210> 58
 <211> 987
 <212> DNA
 <213> Canis familiaris

<220>
 <221> CDS
 <222> (1)..(987)

<400> 58

| | |
|---|-----|
| atg cac cct cag cag ttg gtc atc tcc tgg ttt tcc ctc gtt ttg ctg | 48 |
| Met His Pro Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Leu Leu | |
| 1 5 10 15 | |
| gcg tct ccc ctc atg gcc ata tgg gaa ctg gag aaa gat gtt tat gtt | 96 |
| Ala Ser Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asp Val Tyr Val | |
| 20 25 30 | |
| gta gag ttg gac tgg cac cct gat gcc ccc gga gaa atg gtg gtc ctc | 144 |
| Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu | |
| 35 40 45 | |
| acc tgc cat acc cct gaa gaa gat gac atc act tgg acc tca gcg cag | 192 |
| Thr Cys His Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln | |
| 50 55 60 | |
| agc agt gaa gtc cta ggt tct ggt aaa act ctg acc atc caa gtc aaa | 240 |
| Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys | |
| 65 70 75 80 | |
| gaa ttt gga gat gct ggc cag tat acc tgc cat aaa gga ggc aag gtt | 288 |
| Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Lys Val | |
| 85 90 95 | |
| ctg agc cgc tca ctc ctg ttg att cac aaa aaa gaa gat gga att tgg | 336 |
| Leu Ser Arg Ser Leu Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp | |
| 100 105 110 | |
| tcc act gat atc tta aag gaa cag aaa gaa tcc aaa aat aag atc ttt | 384 |
| Ser Thr Asp Ile Leu Lys Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe | |
| 115 120 125 | |
| ctg aaa tgt gag gca aag aat tat tct gga cgt ttc aca tgc tgg tgg | 432 |
| Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp | |
| 130 135 140 | |
| ctg acg gca atc agt act gat ttg aaa ttc agt gtc aaa agt agc aga | 480 |
| Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Ser Val Lys Ser Ser Arg | |
| 145 150 155 160 | |
| ggc ttc tct gac ccc caa ggg gtg aca tgt gga gca gtg aca ctt tca | 528 |
| Gly Phe Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Val Thr Leu Ser | |
| 165 170 175 | |
| gca gag agg gtc aga gtg gac aac agg gat tat aag aag tac aca gtg | 576 |
| Ala Glu Arg Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val | |
| 180 185 190 | |
| gag tgt cag gag ggc agt gcc tgc ccc tct gcc gag gag agc cta ccc | 624 |
| Glu Cys Gln Glu Gly Ser Ala Cys Pro Ser Ala Glu Glu Ser Leu Pro | |
| 195 200 205 | |

| | |
|---|-----|
| atc gag gtc gtg gtg gat gct att cac aag ctc aag tat gaa aac tac | 672 |
| Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr | |
| 210 215 220 | |
| acc agc agc ttc ttc atc aga gac atc atc aaa cca gac cca ccc aca | 720 |
| Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Thr | |
| 225 230 235 240 | |
| aac ctg cag ctg aag cca ttg aaa aat tct cgg cac gtg gag gtc agc | 768 |
| Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser | |
| 245 250 255 | |
| tgg gaa tac ccc gac acc tgg agc acc cca cat tcc tac ttc tcc ctg | 816 |
| Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu | |
| 260 265 270 | |
| aca ttt tgc ata cag gcc cag ggc aag aac aat aga gaa aag aaa gat | 864 |
| Thr Phe Cys Ile Gln Ala Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp | |
| 275 280 285 | |
| aga ctc tgc gtg gac aag acc tca gcc aag gtc gtg tgc cac aag gat | 912 |
| Arg Leu Cys Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp | |
| 290 295 300 | |
| gcc aag atc cgc gtg caa gcc cga gac cgc tac tat agt tca tcc tgg | 960 |
| Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp | |
| 305 310 315 320 | |
| agc gac tgg gca tct gtg tca tgc agt | 987 |
| Ser Asp Trp Ala Ser Val Ser Cys Ser | |
| 325 | |

<210> 59
 <211> 329
 <212> PRT
 <213> Canis familiaris

<400> 59

| | |
|---|--|
| Met His Pro Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Leu Leu | |
| 1 5 10 15 | |
| Ala Ser Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asp Val Tyr Val | |
| 20 25 30 | |
| Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu | |
| 35 40 45 | |
| Thr Cys His Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln | |
| 50 55 60 | |

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
 65 70 75 80
 Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Lys Val
 85 90 95
 Leu Ser Arg Ser Leu Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp
 100 105 110
 Ser Thr Asp Ile Leu Lys Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe
 115 120 125
 Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140
 Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Ser Val Lys Ser Ser Arg
 145 150 155 160
 Gly Phe Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Val Thr Leu Ser
 165 170 175
 Ala Glu Arg Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val
 180 185 190
 Glu Cys Gln Glu Gly Ser Ala Cys Pro Ser Ala Glu Glu Ser Leu Pro
 195 200 205
 Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr
 210 215 220
 Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Thr
 225 230 235 240
 Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser
 245 250 255
 Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
 260 265 270
 Thr Phe Cys Ile Gln Ala Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp
 275 280 285
 Arg Leu Cys Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp

290

295

300

Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp
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Ser Asp Trp Ala Ser Val Ser Cys Ser
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 tctatctttc ttttctctat tgttcttgcc ctgggcctgt atgcaaatg tcagggagaa 180
 gtaggaatgt ggggtgctcc aggtgtcggg gtattcccag ctgacctcca cgtgccgaga 240
 atttttcaat ggcttcagct gcagggttgt ggggtgggtct ggtttgatga tgtctctgat 300
 gaagaagctg ctggtgtagt tttcatactt gagcttgtga atagcatcca ccacgacctc 360
 gatgggtagg ctctcctcgg cagaggggca ggcactgccc tctgacact ccactgtgta 420
 cttcttataa tccctgttgt ccactctgac cctctctgct gaaagtgtca ctgctccaca 480
 tgtcaccctt tgggggtcag agaagcctct gctacttttg aactgaatt tcaaatcagt 540
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 cagaaagatc ttatttttgg attctttctg ttcctttaag atatcagtgg accaaattcc 660
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 ggtatactgg ccagcatctc caaattcttt gacttgatg gtcagagttt taccagaacc 780
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 ggtgaggacc accatttctc cgggggcac aggggtgccag tccaactcta caacataaac 900
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<400> 61

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| Met His Pro Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Leu Leu | |
| 1 5 10 15 | |
| gcg tct ccc ctc atg gcc ata tgg gaa ctg gag aaa gat gtt tat gtt | 96 |
| Ala Ser Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asp Val Tyr Val | |
| 20 25 30 | |
| gta gag ttg gac tgg cac cct gat gcc ccc gga gaa atg gtg gtc ctc | 144 |
| Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu | |
| 35 40 45 | |
| acc tgc cat acc cct gaa gaa gat gac atc act tgg acc tca gcg cag | 192 |
| Thr Cys His Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln | |
| 50 55 60 | |
| agc agt gaa gtc cta ggt tct ggt aaa act ctg acc atc caa gtc aaa | 240 |
| Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys | |
| 65 70 75 80 | |
| gaa ttt gga gat gct ggc cag tat acc tgc cat aaa gga ggc aag gtt | 288 |
| Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Lys Val | |
| 85 90 95 | |
| ctg agc cgc tca ctc ctg ttg att cac aaa aaa gaa gat gga att tgg | 336 |
| Leu Ser Arg Ser Leu Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp | |
| 100 105 110 | |
| tcc act gat atc tta aag gaa cag aaa gaa tcc aaa aat aag atc ttt | 384 |
| Ser Thr Asp Ile Leu Lys Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe | |
| 115 120 125 | |
| ctg aaa tgt gag gca aag aat tat tct gga cgt ttc aca tgc tgg tgg | 432 |
| Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp | |
| 130 135 140 | |
| ctg acg gca atc agt act gat ttg aaa ttc agt gtc aaa agt agc aga | 480 |
| Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Ser Val Lys Ser Ser Arg | |
| 145 150 155 160 | |
| ggc ttc tct gac ccc caa ggg gtg aca tgt gga gca gtg aca ctt tca | 528 |
| Gly Phe Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Val Thr Leu Ser | |
| 165 170 175 | |
| gca gag agg gtc aga gtg gac aac agg gat tat aag aag tac aca gtg | 576 |
| Ala Glu Arg Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val | |
| 180 185 190 | |
| gag tgt cag gag ggc agt gcc tgc ccc tct gcc gag gag agc cta ccc | 624 |
| Glu Cys Gln Glu Gly Ser Ala Cys Pro Ser Ala Glu Glu Ser Leu Pro | |
| 195 200 205 | |

| | |
|---|------|
| atc gag gtc gtg gtg gat gct att cac aag ctc aag tat gaa aac tac Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr 210 215 220 | 672 |
| acc agc agc ttc ttc atc aga gac atc atc aaa cca gac cca ccc aca Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Thr 225 230 235 240 | 720 |
| aac ctg cag ctg aag cca ttg aaa aat tct cgg cac gtg gag gtc agc Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser 245 250 255 | 768 |
| tgg gaa tac ccc gac acc tgg agc acc cca cat tcc tac ttc tcc ctg Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu 260 265 270 | 816 |
| aca ttt tgc ata cag gcc cag ggc aag aac aat aga gaa aag aaa gat Thr Phe Cys Ile Gln Ala Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp 275 280 285 | 864 |
| aga ctc tgc gtg gac aag acc tca gcc aag gtc gtg tgc cac aag gat Arg Leu Cys Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp 290 295 300 | 912 |
| gcc aag atc cgc gtg caa gcc cga gac cgc tac tat agt tca tcc tgg Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp 305 310 315 320 | 960 |
| agc gac tgg gca tct gtg tca tgc agt ggt ggc ggt ggc ggc gga tct Ser Asp Trp Ala Ser Val Ser Cys Ser Gly Gly Gly Gly Gly Gly Ser 325 330 335 | 1008 |
| aga aac ttg cca acc cct act cca tcc ccg ggt atg ttc caa tgt ttg Arg Asn Leu Pro Thr Pro Thr Pro Ser Pro Gly Met Phe Gln Cys Leu 340 345 350 | 1056 |
| aac cac tcc caa acc ttg ttg aga gcc gtc agc aac acg ctt cag aag Asn His Ser Gln Thr Leu Leu Arg Ala Val Ser Asn Thr Leu Gln Lys 355 360 365 | 1104 |
| gcc aga caa act cta gaa tta tat tcc tgc act tcc gaa gag att gat Ala Arg Gln Thr Leu Glu Leu Tyr Ser Cys Thr Ser Glu Glu Ile Asp 370 375 380 | 1152 |
| cat gaa gat atc aca aag gat aaa acc agc aca gtg gag gcc tgc tta His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu 385 390 395 400 | 1200 |
| cca ctg gaa tta acc atg aat gag agt tgc ctg gct tcc aga gag atc Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile 405 410 415 | 1248 |
| tct ttg ata act aac ggg agt tgc ctg gcc tct gga aag gcc tct ttt Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala Ser Gly Lys Ala Ser Phe 420 425 430 | 1296 |

| | |
|---|------|
| atg acg gtc ctg tgc ctt agc agc atc tat gag gac ttg aag atg tac | 1344 |
| Met Thr Val Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr | |
| 435 440 445 | |
| | |
| cag atg gaa ttc aag gcc atg aac gca aag ctt tta atg gat ccc aag | 1392 |
| Gln Met Glu Phe Lys Ala Met Asn Ala Lys Leu Leu Met Asp Pro Lys | |
| 450 455 460 | |
| | |
| agg cag atc ttt ctg gat caa aac atg ctg aca gct atc gat gag ctg | 1440 |
| Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Thr Ala Ile Asp Glu Leu | |
| 465 470 475 480 | |
| | |
| tta cag gcc ctg aat ttc aac agt gtg act gtg cca cag aaa tcc tcc | 1488 |
| Leu Gln Ala Leu Asn Phe Asn Ser Val Thr Val Pro Gln Lys Ser Ser | |
| 485 490 495 | |
| | |
| ctt gaa gag ccg gat ttt tat aaa act aaa atc aag ctc tgc ata ctt | 1536 |
| Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu | |
| 500 505 510 | |
| | |
| ctt cat gct ttc aga att cgt gcg gtg acc atc aat aga atg atg tcc | 1584 |
| Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Met Met Ser | |
| 515 520 525 | |
| | |
| tac ttg aac tct tcc | 1599 |
| Tyr Leu Asn Ser Ser | |
| 530 | |

<210> 62
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 <212> PRT
 <213> Canis familiaris

<400> 62

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| Met His Pro Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Leu Leu |
| 1 5 10 15 |

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| Ala Ser Pro Leu Met Ala Ile Trp Glu Leu Glu Lys Asp Val Tyr Val |
| 20 25 30 |

| |
|---|
| Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu |
| 35 40 45 |

| |
|---|
| Thr Cys His Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln |
| 50 55 60 |

| |
|---|
| Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys |
| 65 70 75 80 |

| |
|---|
| Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Lys Val |
|---|

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Leu | Ser | Arg | Ser | Leu | Leu | Leu | Ile | His | Lys | Lys | Glu | Asp | Gly | Ile | Trp | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Ser | Thr | Asp | Ile | Leu | Lys | Glu | Gln | Lys | Glu | Ser | Lys | Asn | Lys | Ile | Phe | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Leu | Lys | Cys | Glu | Ala | Lys | Asn | Tyr | Ser | Gly | Arg | Phe | Thr | Cys | Trp | Trp | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Leu | Thr | Ala | Ile | Ser | Thr | Asp | Leu | Lys | Phe | Ser | Val | Lys | Ser | Ser | Arg | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Gly | Phe | Ser | Asp | Pro | Gln | Gly | Val | Thr | Cys | Gly | Ala | Val | Thr | Leu | Ser | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Ala | Glu | Arg | Val | Arg | Val | Asp | Asn | Arg | Asp | Tyr | Lys | Lys | Tyr | Thr | Val | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Glu | Cys | Gln | Glu | Gly | Ser | Ala | Cys | Pro | Ser | Ala | Glu | Glu | Ser | Leu | Pro | | |
| | 195 | | | | | | 200 | | | | | 205 | | | | | |
| Ile | Glu | Val | Val | Val | Asp | Ala | Ile | His | Lys | Leu | Lys | Tyr | Glu | Asn | Tyr | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Thr | Ser | Ser | Phe | Phe | Ile | Arg | Asp | Ile | Ile | Lys | Pro | Asp | Pro | Pro | Thr | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Asn | Leu | Gln | Leu | Lys | Pro | Leu | Lys | Asn | Ser | Arg | His | Val | Glu | Val | Ser | | |
| | | | | 245 | | | | 250 | | | | | | 255 | | | |
| Trp | Glu | Tyr | Pro | Asp | Thr | Trp | Ser | Thr | Pro | His | Ser | Tyr | Phe | Ser | Leu | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| Thr | Phe | Cys | Ile | Gln | Ala | Gln | Gly | Lys | Asn | Asn | Arg | Glu | Lys | Lys | Asp | | |
| | 275 | | | | | 280 | | | | | 285 | | | | | | |
| Arg | Leu | Cys | Val | Asp | Lys | Thr | Ser | Ala | Lys | Val | Val | Cys | His | Lys | Asp | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | |
| Ala | Lys | Ile | Arg | Val | Gln | Ala | Arg | Asp | Arg | Tyr | Tyr | Ser | Ser | Ser | Trp | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |

Ser Asp Trp Ala Ser Val Ser Cys Ser Gly Gly Gly Gly Gly Gly Ser
325 330 335

Arg Asn Leu Pro Thr Pro Thr Pro Ser Pro Gly Met Phe Gln Cys Leu
340 345 350

Asn His Ser Gln Thr Leu Leu Arg Ala Val Ser Asn Thr Leu Gln Lys
355 360 365

Ala Arg Gln Thr Leu Glu Leu Tyr Ser Cys Thr Ser Glu Glu Ile Asp
370 375 380

His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
385 390 395 400

Pro Leu Glu Leu Thr Met Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile
405 410 415

Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala Ser Gly Lys Ala Ser Phe
420 425 430

Met Thr Val Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
435 440 445

Gln Met Glu Phe Lys Ala Met Asn Ala Lys Leu Leu Met Asp Pro Lys
450 455 460

Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Thr Ala Ile Asp Glu Leu
465 470 475 480

Leu Gln Ala Leu Asn Phe Asn Ser Val Thr Val Pro Gln Lys Ser Ser
485 490 495

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
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Tyr Leu Asn Ser Ser
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 gccaccgcca ccactgcatg acacagatgc ccagtcgctc caggatgaac tatagtagcg 660
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 gatgtctctg atgaagaagc tgctggtgta gttttcatac ttgagcttgt gaatagcatc 960
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 cactgctcca catgtcacc cttgggggtc agagaagcct ctgctacttt tgacactgaa 1140
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<400> 64
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Ile Trp Glu Leu Glu Lys Asp Val Tyr Val Val Glu Leu Asp Trp His
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cct gat gcc ccc gga gaa atg gtg gtc ctc acc tgc cat acc cct gaa 96
Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys His Thr Pro Glu
20 25 30

gaa gat gac atc act tgg acc tca gcg cag agc agt gaa gtc cta ggt 144
Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln Ser Ser Glu Val Leu Gly
35 40 45

tct ggt aaa act ctg acc atc caa gtc aaa gaa ttt gga gat gct ggc 192
Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly
50 55 60

cag tat acc tgc cat aaa gga ggc aag gtt ctg agc cgc tca ctc ctg 240
Gln Tyr Thr Cys His Lys Gly Gly Lys Val Leu Ser Arg Ser Leu Leu
65 70 75 80

ttg att cac aaa aaa gaa gat gga att tgg tcc act gat atc tta aag 288
Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
85 90 95

gaa cag aaa gaa tcc aaa aat aag atc ttt ctg aaa tgt gag gca aag 336

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Glu | Gln | Lys | Glu | Ser | Lys | Asn | Lys | Ile | Phe | Leu | Lys | Cys | Glu | Ala | Lys | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| aat | tat | tct | gga | cgt | ttc | aca | tgc | tgg | tgg | ctg | acg | gca | atc | agt | act | 384 |
| Asn | Tyr | Ser | Gly | Arg | Phe | Thr | Cys | Trp | Trp | Leu | Thr | Ala | Ile | Ser | Thr | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| gat | ttg | aaa | ttc | agt | gtc | aaa | agt | agc | aga | ggc | ttc | tct | gac | ccc | caa | 432 |
| Asp | Leu | Lys | Phe | Ser | Val | Lys | Ser | Ser | Arg | Gly | Phe | Ser | Asp | Pro | Gln | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| ggg | gtg | aca | tgt | gga | gca | gtg | aca | ctt | tca | gca | gag | agg | gtc | aga | gtg | 480 |
| Gly | Val | Thr | Cys | Gly | Ala | Val | Thr | Leu | Ser | Ala | Glu | Arg | Val | Arg | Val | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| gac | aac | agg | gat | tat | aag | aag | tac | aca | gtg | gag | tgt | cag | gag | ggc | agt | 528 |
| Asp | Asn | Arg | Asp | Tyr | Lys | Lys | Tyr | Thr | Val | Glu | Cys | Gln | Glu | Gly | Ser | |
| | | | | 165 | | | | 170 | | | | | | 175 | | |
| gcc | tgc | ccc | tct | gcc | gag | gag | agc | cta | ccc | atc | gag | gtc | gtg | gtg | gat | 576 |
| Ala | Cys | Pro | Ser | Ala | Glu | Glu | Ser | Leu | Pro | Ile | Glu | Val | Val | Val | Asp | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| gct | att | cac | aag | ctc | aag | tat | gaa | aac | tac | acc | agc | agc | ttc | ttc | atc | 624 |
| Ala | Ile | His | Lys | Leu | Lys | Tyr | Glu | Asn | Tyr | Thr | Ser | Ser | Phe | Phe | Ile | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| aga | gac | atc | atc | aaa | cca | gac | cca | ccc | aca | aac | ctg | cag | ctg | aag | cca | 672 |
| Arg | Asp | Ile | Ile | Lys | Pro | Asp | Pro | Pro | Thr | Asn | Leu | Gln | Leu | Lys | Pro | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| ttg | aaa | aat | tct | cgg | cac | gtg | gag | gtc | agc | tgg | gaa | tac | ccc | gac | acc | 720 |
| Leu | Lys | Asn | Ser | Arg | His | Val | Glu | Val | Ser | Trp | Glu | Tyr | Pro | Asp | Thr | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| tgg | agc | acc | cca | cat | tcc | tac | ttc | tcc | ctg | aca | ttt | tgc | ata | cag | gcc | 768 |
| Trp | Ser | Thr | Pro | His | Ser | Tyr | Phe | Ser | Leu | Thr | Phe | Cys | Ile | Gln | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| cag | ggc | aag | aac | aat | aga | gaa | aag | aaa | gat | aga | ctc | tgc | gtg | gac | aag | 816 |
| Gln | Gly | Lys | Asn | Asn | Arg | Glu | Lys | Lys | Asp | Arg | Leu | Cys | Val | Asp | Lys | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| acc | tca | gcc | aag | gtc | gtg | tgc | cac | aag | gat | gcc | aag | atc | cgc | gtg | caa | 864 |
| Thr | Ser | Ala | Lys | Val | Val | Cys | His | Lys | Asp | Ala | Lys | Ile | Arg | Val | Gln | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| gcc | cga | gac | cgc | tac | tat | agt | tca | tcc | tgg | agc | gac | tgg | gca | tct | gtg | 912 |
| Ala | Arg | Asp | Arg | Tyr | Tyr | Ser | Ser | Ser | Trp | Ser | Asp | Trp | Ala | Ser | Val | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| tca | tgc | agt | ggc | ggc | ggc | ggc | gga | tct | aga | aac | ttg | cca | acc | cct | | 960 |
| Ser | Cys | Ser | Gly | Gly | Gly | Gly | Gly | Gly | Ser | Arg | Asn | Leu | Pro | Thr | Pro | |
| 305 | | | | | 310 | | | | 315 | | | | | 320 | | |
| act | cca | tcc | ccg | ggc | atg | ttc | caa | tgt | ttg | aac | cac | tcc | caa | acc | ttg | 1008 |
| Thr | Pro | Ser | Pro | Gly | Met | Phe | Gln | Cys | Leu | Asn | His | Ser | Gln | Thr | Leu | |

Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys His Thr Pro Glu
 20 25 30

Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln Ser Ser Glu Val Leu Gly
 35 40 45

Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly
 50 55 60

Gln Tyr Thr Cys His Lys Gly Gly Lys Val Leu Ser Arg Ser Leu Leu
 65 70 75 80

Leu Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
 85 90 95

Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys
 100 105 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr
 115 120 125

Asp Leu Lys Phe Ser Val Lys Ser Ser Arg Gly Phe Ser Asp Pro Gln
 130 135 140

Gly Val Thr Cys Gly Ala Val Thr Leu Ser Ala Glu Arg Val Arg Val
 145 150 155 160

Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser
 165 170 175

Ala Cys Pro Ser Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp
 180 185 190

Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile
 195 200 205

Arg Asp Ile Ile Lys Pro Asp Pro Pro Thr Asn Leu Gln Leu Lys Pro
 210 215 220

Leu Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr
 225 230 235 240

Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Ile Gln Ala
 245 250 255
 Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Cys Val Asp Lys
 260 265 270
 Thr Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln
 275 280 285
 Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asp Trp Ala Ser Val
 290 295 300
 Ser Cys Ser Gly Gly Gly Gly Gly Gly Ser Arg Asn Leu Pro Thr Pro
 305 310 315 320
 Thr Pro Ser Pro Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu
 325 330 335
 Leu Arg Ala Val Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu
 340 345 350
 Leu Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys
 355 360 365
 Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met
 370 375 380
 Asn Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly
 385 390 395 400
 Ser Cys Leu Ala Ser Gly Lys Ala Ser Phe Met Thr Val Leu Cys Leu
 405 410 415
 Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Met Glu Phe Lys Ala
 420 425 430
 Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp
 435 440 445
 Gln Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Phe
 450 455 460
 Asn Ser Val Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe

465 470 475 480

Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile
485 490 495

Arg Ala Val Thr Ile Asn Arg Met Met Ser Tyr Leu Asn Ser Ser
500 505 510

<210> 68
<211> 1533
<212> DNA
<213> Canis familiaris

<400> 68
ggaagagttc aagtaggaca tcattctatt gatggtcacc gcacgaattc tgaaagcatg 60
aagaagtatg cagagcttga ttttagtttt ataaaaatcc ggctcttcaa gggaggattt 120
ctgtggcaca gtcacactgt tgaaattcag ggctgtaac agctcatcga tagctgtcag 180
catgttttga tccagaaaga tctgcctctt gggatccatt aaaagctttg cgttcatggc 240
cttgaattcc atctgttaca tcttcaagtc ctcatagatg ctgctaaggc acaggaccgt 300
cataaaagag gcctttccag aggccaggca actcccgtta gttatcaaag agatctctct 360
ggaagccagg caactctcat tcatgggttaa ttccagtggg aagcaggcct ccactgtgct 420
ggttttatcc tttgtgatat cttcatgac aatctcttcg gaagtgcagg aatataattc 480
tagagtttgt ctggccttct gaagcgtggt gctgacggc ctcaacaagg tttgggagtg 540
gttcaaacat tggaacatac ccggggatgg agtaggggtt ggcaagtttc tagatccgcc 600
gccaccgcca ccactgcatg acacagatgc ccagtcgctc caggatgaac tatagtagcg 660
gtctcgggct tgcacgcgga tcttggcatc cttgtggcac acgaccttgg ctgaggtctt 720
gtccacgcag agtctatctt tcttttctct attgttcttg ccctgggcct gtatgcaaaa 780
tgtcagggag aagtaggaat gtgggggtgct ccaggtgtcg gggattccc agctgacctc 840
cacgtgccga gaatttttca atggcttcag ctgcagggtt gtgggtgggt ctggtttgat 900
gatgtctctg atgaagaagc tgctgggtgta gttttcatac ttgagcttgt gaatagcatc 960
caccacgacc tcgatgggta ggctctctc gccagagggg caggcactgc cctcctgaca 1020
ctccactgtg tacttcttat aatccctggt gtccactctg accctctctg ctgaaagtgt 1080
cactgctcca catgtcacc cttgggggtc agagaagcct ctgctacttt tgacactgaa 1140
tttcaaatca gtactgattg ccgtcagcca ccagcatgtg aaacgtccag aataattctt 1200

tgcctcacat ttcagaaaga tcttattttt ggattctttc tgttccttta agatatcagt 1260
 ggaccaaatt ccatcttctt ttttgtgaat caacaggagt gagcggctca gaaccttgcc 1320
 tccttttatgg caggtatact ggccagcate tccaaattct ttgacttgga tggtcagagt 1380
 tttaccagaa cctaggactt cactgctctg cgctgaggtc caagtgatgt catcttcttc 1440
 aggggtatgg caggtgagga ccaccatttc tccgggggca tcagggtgcc agtccaactc 1500
 tacaacataa acatctttct ccagttccca tat 1533

<210> 69
 <211> 30
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 69
 gccaaagctcg aaattaaccc tcactaaagg 30

<210> 70
 <211> 28
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 70
 cgacggccag tgaattgtaa tacgactc 28

<210> 71
 <211> 31
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 71
 agtgatgaag gcctggaatc agattacttt g 31

<210> 72
 <211> 32
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 72
 atggcctgga acacttctct gaaagaatat ga 32

<210> 73
 <211> 30
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 73
 aactattgag cacagggata aagatgactg 30

<210> 74
 <211> 33
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 74
 aatatctaatt tcttgttttg aacagtgaac att 33

<210> 75
 <211> 36
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 75
 tatgccggct actttggcaa gcttgaacat aaactc 36

<210> 76
 <211> 37
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 76
 ggcctcgagc taattcttgt tttgaacagt gaacatt 37

<210> 77
 <211> 28
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

 <400> 77
 atggccgaca aggtcctgaa ggagaaga 28

 <210> 78
 <211> 33
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 78
 ttaatgtcct gggaagaggt agaaacatct tgt 33

 <210> 79
 <211> 26
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 79
 tcaagccac aatctggaaa ttctca 26

 <210> 80
 <211> 26
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 80
 ctggagagtc actgatcaac agttcc 26

 <210> 81
 <211> 36
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 81
 acaaggatcc accatggccg acaaggatct gaaggg 36

 <210> 82
 <211> 39

<212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 82
 cgcctctaga cctcaattgc caggggaagag atagaagta 39

<210> 83
 <211> 60
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 83
 ctgcagtggg ggcggtggcg gcggatctag aaacttgcca acccctactc catccccggg 60

<210> 84
 <211> 60
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 84
 cccgggggatg gagtaggggt tggcaagttt ctagatccgc cgccaccgcc accactgcag 60

<210> 85
 <211> 28
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 85
 atgcatactc agcagttggt catgcct 28

<210> 86
 <211> 25
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 86
 tgcaggacac ggatgcccag ttgct 25

<210> 87
 <211> 37
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 87
 acaggtacca tgcatacctca gcagttgggc atcgctt 37

 <210> 88
 <211> 25
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 88
 ctaactgcag gacacggatg cccag 25

 <210> 89
 <211> 19
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 89
 atgtgcccgcc cgcgtggcc 19

 <210> 90
 <211> 27
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 90
 ctaggaagca ttcagatagc tcatcat 27

 <210> 91
 <211> 39
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

<400> 91
 tatgaccg g gatgttcca gtgcctcaac cactcccaa 39

<210> 92
 <211> 41
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 92
 atgactgcgg ccgcctagga agcattcaga tagctcatca t 41

<210> 93
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 93
 ccatcctggc cctgctaagc 20

<210> 94
 <211> 22
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 94
 ccatctggta catcttcaag tc 22

<210> 95
 <211> 38
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

<400> 95
 aaaaaacccg ggtatgttcc aatgtttcaa ccactccc 38

<210> 96
 <211> 51
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic Primer

 <400> 96
 gcggccgctc gagttaggaa gagttcaagt aggacatcat tctattgatg g 51

 <210> 97
 <211> 22
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 97
 cttaaaggaa cagaaagaat cc 22

 <210> 98
 <211> 19
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 98
 ggtattccca gctgacctc 19

 <210> 99
 <211> 37
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 99
 cataggtacc atgcaccctc agcagttggt catctcc 37

 <210> 100
 <211> 29
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Synthetic Primer

 <400> 100
 atctaaatgc atgacacaga tgcccagtc 29

 <210> 101
 <211> 561

<212> DNA
 <213> Felis catus

<220>
 <221> CDS
 <222> (1)..(561)

<400> 101
 ggg atg ttc cag tgc ctc aac cac tcc caa acc ctg ctg cga gcc atc 48
 Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu Leu Arg Ala Ile
 1 5 10 15
 agc aac acg ctt cag aag gcc aga caa act cta gaa ttt tac tcc tgc 96
 Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Ser Cys
 20 25 30
 act tcc gaa gag att gat cat gaa gat atc aca aaa gat aaa acc agc 144
 Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser
 35 40 45
 aca gtg gag gcc tgc tta cca ctg gaa tta acc atg aat gag agt tgc 192
 Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn Glu Ser Cys
 50 55 60
 ctg gct tcc aga gag atc tct ctg ata act aat ggg agt tgc ctg gcc 240
 Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala
 65 70 75 80
 tcc aga aag acc tct ttt atg acg acc ctg tgc ctt agc agt atc tat 288
 Ser Arg Lys Thr Ser Phe Met Thr Thr Leu Cys Leu Ser Ser Ile Tyr
 85 90 95
 gag gac ttg aag atg tac cag gtg gag ttc aag gcc atg aat gca aag 336
 Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Ala Met Asn Ala Lys
 100 105 110
 ctg tta atg gat cct aaa agg cag atc ttt ctg gat caa aac atg ctg 384
 Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu
 115 120 125
 aca gct att gat gag ctg tta cag gcc ctg aat gtc aac agt gtg act 432
 Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Val Asn Ser Val Thr
 130 135 140
 gtg cca cag aac tcc tcc ctg gaa gaa ccg gat ttt tat aaa act aaa 480
 Val Pro Gln Asn Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys
 145 150 155 160
 atc aag ctc tgc ata ctt ctt cat gct ttc aga att cgt gca gtg acc 528
 Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr
 165 170 175
 atc aat aga atg atg agc tat ctg aat gct tcc 561
 Ile Asn Arg Met Met Ser Tyr Leu Asn Ala Ser
 180 185

<210> 102
 <211> 187
 <212> PRT
 <213> Felis catus

<400> 102

Gly Met Phe Gln Cys Leu Asn His Ser Gln Thr Leu Leu Arg Ala Ile
 1 5 10 15

Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Ser Cys
 20 25 30

Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser
 35 40 45

Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn Glu Ser Cys
 50 55 60

Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser Cys Leu Ala
 65 70 75 80

Ser Arg Lys Thr Ser Phe Met Thr Thr Leu Cys Leu Ser Ser Ile Tyr
 85 90 95

Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Ala Met Asn Ala Lys
 100 105 110

Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu
 115 120 125

Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Val Asn Ser Val Thr
 130 135 140

Val Pro Gln Asn Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys
 145 150 155 160

Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr
 165 170 175

Ile Asn Arg Met Met Ser Tyr Leu Asn Ala Ser
 180 185

<210> 103

<211> 561
 <212> DNA
 <213> Felis catus

<400> 103
 ggaagcattc agatagctca tcattctatt gatggtcact gcacgaattc tgaaagcatg 60
 aagaagtatg cagagcttga ttttagtttt ataaaaatcc ggttcttcca gggaggagtt 120
 ctgtggcaca gtcacactgt tgacattcag ggcttgtaac agctcatcaa tagctgtcag 180
 catgttttga tccagaaaga tctgcctttt aggatccatt aacagctttg cattcatggc 240
 cttgaactcc acctggtaca tcttcaagtc ctcatagata ctgctaaggc acagggtcgt 300
 cataaaagag gtctttcttg aggccaggca actccatta gttatcagag agatctctct 360
 ggaagccagg caactctcat tcatggttaa ttccagtggc aagcaggcct ccactgtgct 420
 gggttttatct tttgtgatat cttcatgac aatctcttcg gaagtgcagg agtaaaattc 480
 tagagtttgt ctggccttct gaagcgtggt gctgatggct cgcagcaggg tttgggagtg 540
 gttgaggcac tggaacatcc c 561

<210> 104
 <211> 1455
 <212> DNA
 <213> Canis familiaris

<220>
 <221> CDS
 <222> (232)..(897)

<400> 104
 ggcacgaggc aaaccccgcg ggcccagctc cacgtgtcac cgagaagctg atgtagagag 60
 agacagagag agaaagcaag ccggacaccg gagtcccgga aaagtccctg cgcgccctcg 120
 gccattata aaaatgtgac cccccgggct ggccctccac cgccgcccct ccctgccgcg 180
 tccgcagtcc gcgtccagcg cccgcccggg tccacgcagc gcccgcccag c atg tgc 237
 Met Cys
 1
 ccg ccg cgc ggc ctc ctc ctt gtg acc atc ctg gtc ctg cta agc cac 285
 Pro Pro Arg Gly Leu Leu Leu Val Thr Ile Leu Val Leu Leu Ser His
 5 10 15
 ctg gac cac ctt act tgg gcc agg agc ctc ccc aca gcc tca ccg agc 333
 Leu Asp His Leu Thr Trp Ala Arg Ser Leu Pro Thr Ala Ser Pro Ser
 20 25 30
 cca gga ata ttc cag tgc ctc aac cac tcc caa aac ctg ctg aga gcc 381
 Pro Gly Ile Phe Gln Cys Leu Asn His Ser Gln Asn Leu Leu Arg Ala

| 35 | 40 | 45 | 50 | |
|--|-----|-----|-----|------|
| gtc agc aac acg ctt cag aag gcc aga caa act cta gaa tta tat tcc | | | | 429 |
| Val Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Leu Tyr Ser | | | | |
| | 55 | 60 | 65 | |
| tgc act tcc gaa gag att gat cat gaa gat atc aca aag gat aaa acc | | | | 477 |
| Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr | | | | |
| | 70 | 75 | 80 | |
| agc aca gtg gag gcc tgc tta cca ctg gaa tta acc atg aat gag agt | | | | 525 |
| Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn Glu Ser | | | | |
| | 85 | 90 | 95 | |
| tgc ctg gct tcc aga gag atc tct ttg ata act aac ggg agt tgc ctg | | | | 573 |
| Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser Cys Leu | | | | |
| | 100 | 105 | 110 | |
| gcc tct gga aag gcc tct ttt atg acg gtc ctg tgc ctt agc agc atc | | | | 621 |
| Ala Ser Gly Lys Ala Ser Phe Met Thr Val Leu Cys Leu Ser Ser Ile | | | | |
| | 115 | 120 | 125 | 130 |
| tat gag gac ttg aag atg tac cag atg gaa ttc aag gcc atg aac gca | | | | 669 |
| Tyr Glu Asp Leu Lys Met Tyr Gln Met Glu Phe Lys Ala Met Asn Ala | | | | |
| | 135 | 140 | 145 | |
| aag ctt tta atg gat ccc aag agg cag atc ttt ctg gat caa aac atg | | | | 717 |
| Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met | | | | |
| | 150 | 155 | 160 | |
| ctg aca gct atc gat gag ctg tta cag gcc ctg aat ttc aac agt gtg | | | | 765 |
| Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Phe Asn Ser Val | | | | |
| | 165 | 170 | 175 | |
| act gtg cca cag aaa tcc tcc ctt gaa gag ccg gat ttt tat aaa act | | | | 813 |
| Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr | | | | |
| | 180 | 185 | 190 | |
| aaa atc aag ctc tgc ata ctt ctt cat gct ttc aga att cgt gcg gtg | | | | 861 |
| Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val | | | | |
| | 195 | 200 | 205 | 210 |
| acc atc gat aga atg atg agt tat ctg aat tct tcc taaaaagctg | | | | 907 |
| Thr Ile Asp Arg Met Met Ser Tyr Leu Asn Ser Ser | | | | |
| | 215 | 220 | | |
| aggctctctc cgactttaaa gtcattccta taaaaatgtg aaccctaaaag aatttttcat | | | | 967 |
| aagatagggg ttaagaacca gggaggggggt ggcttgacct ggtcctactt aagctagtag | | | | 1027 |
| gataattctc atgcttggtt acattagttg ccactcaaatt tttgaaagat gtgactgtta | | | | 1087 |
| tatcccacac gatgcctttg accaagtata tttcacattt actatggata agttaagtgt | | | | 1147 |
| tcgtgagcaa attgctaaag aggaaaaatg tcctcaccga acatgttttt attttcctt | | | | 1207 |
| taatagaaga gcaagacttt ataagctatt tctgtaccaa actgtttgtg gaaacaaaca | | | | 1267 |

ctcaagcata atttatttaa aaatacttat ttatataatt ttgtgttcat gaaagcatgt 1327
gaattaatth atatttatth atgttatatt tattaaagta tttattatca agtggatttg 1387
ggatatctta tgttctaaaa ataaaatgat tgagtagaaa aaaaaaaaaa aaaaaaaaaa 1447
aaaaaaaaa 1455

<210> 105
<211> 222
<212> PRT
<213> Canis familiaris

<400> 105

Met Cys Pro Pro Arg Gly Leu Leu Leu Val Thr Ile Leu Val Leu Leu
1 5 10 15

Ser His Leu Asp His Leu Thr Trp Ala Arg Ser Leu Pro Thr Ala Ser
20 25 30

Pro Ser Pro Gly Ile Phe Gln Cys Leu Asn His Ser Gln Asn Leu Leu
35 40 45

Arg Ala Val Ser Asn Thr Leu Gln Lys Ala Arg Gln Thr Leu Glu Leu
50 55 60

Tyr Ser Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp
65 70 75 80

Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Met Asn
85 90 95

Glu Ser Cys Leu Ala Ser Arg Glu Ile Ser Leu Ile Thr Asn Gly Ser
100 105 110

Cys Leu Ala Ser Gly Lys Ala Ser Phe Met Thr Val Leu Cys Leu Ser
115 120 125

Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Met Glu Phe Lys Ala Met
130 135 140

Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln
145 150 155 160

Asn Met Leu Thr Ala Ile Asp Glu Leu Leu Gln Ala Leu Asn Phe Asn
165 170 175

Ser Val Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr
180 185 190

Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg
195 200 205

Ala Val Thr Ile Asp Arg Met Met Ser Tyr Leu Asn Ser Ser
210 215 220

<210> 106
<211> 1455
<212> DNA
<213> Canis familiaris

<400> 106
tttttttttt tttttttttt tttttttttt tctactcaat cattttattt ttagaacata 60
agatatccca aatccacttg ataataaata ctttaataaa tataacataa ataaatataa 120
attaattcac atgctttcat gaacacaaaa ttatataaat aagtattttt aaataaatta 180
tgcttgagtg tttgtttcta caaacagttt ggtacagaaa tagcttataa agtcttgctc 240
ttctattaaa gggaaaataa aaacatgttc ggtgaggaca tttttcctct ttagcaattt 300
gctcacgaac acttaactta tccatagtaa atgtgaaata tacttggtca aaggcatcgt 360
gtgggatata acagtcacat ctttcaaaat ttgagtggca actaatgtaa acaagcatga 420
gaattatcgt actagcttaa gtaggaccag gtcaagccac cccctccctg gttcttaacc 480
cctatcttat gaaaaattct tttgggttca catttttata ggaatgactt taaagtcgag 540
agagacctca gctttttagg aagaattcag ataactcatc attctatcga tggtcaccgc 600
acgaattctg aaagcatgaa gaagtatgca gagcttgatt ttagttttat aaaaatccgg 660
ctcttcaagg gaggatttct gtggcacagt cacactgttg aaattcaggg cctgtaacag 720
ctcatcgata gctgtcagca tgttttgatc cagaaagatc tgcctcttgg gatccattaa 780
aagctttgcy ttcattggcct tgaattccat ctggtacatc ttcaagtcct catagatgct 840
gctaaggcac aggaccgtca taaaagaggc ctttccagag gccaggcaac tcccgttagt 900
tatcaaagag atctctctgg aagccaggca actctcattc atggttaatt ccagtggtaa 960
gcaggcctcc actgtgctgg ttttatacct tgtgatattc tcatgatcaa tctcttcgga 1020
agtgacaggaa tataattcta gagtttgtct ggccttctga agcgtgttgc tgacggctct 1080

cagcaggttt tgggagtggg tgaggcactg gaatattcct gggctcgggtg aggctgtggg 1140
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gaggaggccg cgcggcgggc acatgctggg cgggcgctgc gtggaccccg gcgggcgctg 1260
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atttttataa ttggcccagag gcgcgccagg actttcccgg gactccgggtg tccggcttgc 1380
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<211> 2267
<212> DNA
<213> Canis familiaris

<220>
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<400> 107
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cccagggaaac cttgcagcct ggccagaagc aag atg cat cct cag cag ttg gtc 174
Met His Pro Gln Gln Leu Val
1 5
atc tcc tgg ttt tcc ctc gtt ttg ctg gcg tct ccc ctc atg gcc ata 222
Ile Ser Trp Phe Ser Leu Val Leu Leu Ala Ser Pro Leu Met Ala Ile
10 15 20
tgg gaa ctg gag aaa gat gtt tat gtt gta gag ttg gac tgg cac cct 270
Trp Glu Leu Glu Lys Asp Val Tyr Val Val Glu Leu Asp Trp His Pro
25 30 35
gat gcc ccc gga gaa atg gtg gtc ctc acc tgc cat acc cct gaa gaa 318
Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys His Thr Pro Glu Glu
40 45 50 55
gat gac atc act tgg acc tca gcg cag agc agt gaa gtc cta ggt tct 366
Asp Asp Ile Thr Trp Thr Ser Ala Gln Ser Ser Glu Val Leu Gly Ser
60 65 70
ggt aaa act ctg acc atc caa gtc aaa gaa ttt gga gat gct ggc cag 414
Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln
75 80 85
tat acc tgc cat aaa gga ggc aag gtt ctg agc cgc tca ctc ctg ttg 462
Tyr Thr Cys His Lys Gly Gly Lys Val Leu Ser Arg Ser Leu Leu Leu

| 90 | 95 | 100 | |
|---|----|-----|------|
| att cac aaa aaa gaa gat gga att tgg tcc act gat atc tta aag gaa Ile His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Glu 105 110 115 | | | 510 |
| cag aaa gaa tcc aaa aat aag atc ttt ctg aaa tgt gag gca aag aat Gln Lys Glu Ser Lys Asn Lys Ile Phe Leu Lys Cys Glu Ala Lys Asn 120 125 130 135 | | | 558 |
| tat tct gga cgt ttc aca tgc tgg tgg ctg acg gca atc agt act gat Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Ala Ile Ser Thr Asp 140 145 150 | | | 606 |
| ttg aaa ttc agt gtc aaa agt agc aga ggc ttc tct gac ccc caa ggg Leu Lys Phe Ser Val Lys Ser Ser Arg Gly Phe Ser Asp Pro Gln Gly 155 160 165 | | | 654 |
| gtg aca tgt gga gca gtg aca ctt tca gca gag agg gtc aga gtg gac Val Thr Cys Gly Ala Val Thr Leu Ser Ala Glu Arg Val Arg Val Asp 170 175 180 | | | 702 |
| aac agg gat tat aag aag tac aca gtg gag tgt cag gag ggc agt gcc Asn Arg Asp Tyr Lys Lys Tyr Thr Val Glu Cys Gln Glu Gly Ser Ala 185 190 195 | | | 750 |
| tgc ccc tct gcc gag gag agc cta ccc atc gag gtc gtg gtg gat gct Cys Pro Ser Ala Glu Glu Ser Leu Pro Ile Glu Val Val Val Asp Ala 200 205 210 215 | | | 798 |
| att cac aag ctc aag tat gaa aac tac acc agc agc ttc ttc atc aga Ile His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg 220 225 230 | | | 846 |
| gac atc atc aaa cca gac cca ccc aca aac ctg cag ctg aag cca ttg Asp Ile Ile Lys Pro Asp Pro Pro Thr Asn Leu Gln Leu Lys Pro Leu 235 240 245 | | | 894 |
| aaa aat tct cgg cac gtg gag gtc agc tgg gaa tac ccc gac acc tgg Lys Asn Ser Arg His Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp 250 255 260 | | | 942 |
| agc acc cca cat tcc tac ttc tcc ctg aca ttt tgc ata cag gcc cag Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Ile Gln Ala Gln 265 270 275 | | | 990 |
| ggc aag aac aat aga gaa aag aaa gat aga ctc tgc gtg gac aag acc Gly Lys Asn Asn Arg Glu Lys Lys Asp Arg Leu Cys Val Asp Lys Thr 280 285 290 295 | | | 1038 |
| tca gcc aag gtc gtg tgc cac aag gat gcc aag atc cgc gtg caa gcc Ser Ala Lys Val Val Cys His Lys Asp Ala Lys Ile Arg Val Gln Ala 300 305 310 | | | 1086 |
| cga gac cgc tac tat agt tca tcc tgg agc gac tgg gca tct gtg tcc Arg Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Asp Trp Ala Ser Val Ser 315 320 325 | | | 1134 |

tgc agt taggttccac ccccaggatg aatcttggag ggaaagtgga agatattatg 1190
Cys Ser

caaaattttc taaggacaca ttgaagaggc tccaaaagtt attttctgcc taattttctt 1250
tttgtaaagg gtcattattg tgtcttcgca atatttttta catttaaag ccaaagcccc 1310
actgaaacaa tcagctactt tatttataga ttttcagcta gcaggctgcc actgacctta 1370
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<210> 108

<211> 329

<212> PRT

<213> Canis familiaris

<400> 108

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20 25 30

Val Glu Leu Asp Trp His Pro Asp Ala Pro Gly Glu Met Val Val Leu
 35 40 45
 Thr Cys His Thr Pro Glu Glu Asp Asp Ile Thr Trp Thr Ser Ala Gln
 50 55 60
 Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
 65 70 75 80
 Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Lys Val
 85 90 95
 Leu Ser Arg Ser Leu Leu Leu Ile His Lys Lys Glu Asp Gly Ile Trp
 100 105 110
 Ser Thr Asp Ile Leu Lys Glu Gln Lys Glu Ser Lys Asn Lys Ile Phe
 115 120 125
 Leu Lys Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140
 Leu Thr Ala Ile Ser Thr Asp Leu Lys Phe Ser Val Lys Ser Ser Arg
 145 150 155 160
 Gly Phe Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Val Thr Leu Ser
 165 170 175
 Ala Glu Arg Val Arg Val Asp Asn Arg Asp Tyr Lys Lys Tyr Thr Val
 180 185 190
 Glu Cys Gln Glu Gly Ser Ala Cys Pro Ser Ala Glu Glu Ser Leu Pro
 195 200 205
 Ile Glu Val Val Val Asp Ala Ile His Lys Leu Lys Tyr Glu Asn Tyr
 210 215 220
 Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Thr
 225 230 235 240
 Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg His Val Glu Val Ser
 245 250 255
 Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu

260 265 270
 Thr Phe Cys Ile Gln Ala Gln Gly Lys Asn Asn Arg Glu Lys Lys Asp
 275 280 285
 Arg Leu Cys Val Asp Lys Thr Ser Ala Lys Val Val Cys His Lys Asp
 290 295 300
 Ala Lys Ile Arg Val Gln Ala Arg Asp Arg Tyr Tyr Ser Ser Ser Trp
 305 310 315 320
 Ser Asp Trp Ala Ser Val Ser Cys Ser
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<210> 109
 <211> 2267
 <212> DNA
 <213> Canis familiaris

<400> 109
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 aatcacttta cagaaagcac attcattact taaaagtagc acctcagcga ttggcacttt 180
 ctgggtcacat ccaccagtca gggttcacttg cgctgtccag taagcaattc ttgaccattt 240
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 aggcatccaa aaactaaact tgcttaaaaa tgcaagtggc cctgaattgc tttatcaaca 540
 ccaccgcaag gaagtcttta tggatacagg atctaacatc tccgtctcca gaaacttctc 600
 aaatggattc gtgtctccat gtctctattt aactacctct gtgttcccat ccatcacaaa 660
 tatattatgg tgctggcatc ataattttgt gtgtcactg gttgtcataa aaatgatata 720
 ttcttgcttg aaaagttgtc agtataaata acacataaat tcacattttg cataataggg 780
 cctattcctt acagatcagg tcctgagggg atgaaacata caatatatct tggcacacaa 840
 gtgttcaata acaataaatt aataaataca taaattactt aaatatttaa atagcattaa 900
 ggtcagtggc agcctgctag ctgaaaatct ataaataaag tagctgattg tttcagtggg 960

| | | | | | | |
|------------|------------|------------|-------------|-------------|------------|------|
| catttggcat | ttaaatgtaa | aaaatattgc | gaagacacaa | taatgaccct | ttacaaaaag | 1020 |
| aaaattaggc | agaaaataac | ttttggagcc | tcttcaatgt | gtccttagaa | aattttgcat | 1080 |
| aatatcttcc | actttccctc | caagattcat | cctgggggtg | gaacctaaact | gcaggacaca | 1140 |
| gatgccagct | cgctccagga | tgaactatag | tagcgggtctc | gggcttgac | gcggatcttg | 1200 |
| gcaccttgt | ggcacacgac | cttggctgag | gtcttgtcca | cgcagagtct | atctttcttt | 1260 |
| tctctattgt | tcttgccctg | ggcctgtatg | caaaatgtca | gggagaagta | ggaatgtggg | 1320 |
| gtgctccagg | tgtcggggta | ttcccagctg | acctccagct | gccgagaatt | tttcaatggc | 1380 |
| ttcagctgca | ggtttgtggg | tgggtctggt | ttgatgatgt | ctctgatgaa | gaagctgctg | 1440 |
| gtgtagtttt | catacttgag | cttgtgaata | gcacccacca | cgacctcgat | gggtaggctc | 1500 |
| tcctcggcag | aggggcaggc | actgccctcc | tgacactcca | ctgtgtactt | cttataatcc | 1560 |
| ctgttgtcca | ctctgaccct | ctctgctgaa | agtgtcactg | ctccacatgt | cacccttgg | 1620 |
| gggtcagaga | agcctctgct | acttttgaca | ctgaatttca | aatcagtact | gattgccgtc | 1680 |
| agccaccagc | atgtgaaacg | tccagaataa | ttctttgcct | cacatttcag | aaagatctta | 1740 |
| tttttggatt | ctttctgttc | ctttaagata | tcagtggacc | aaattccatc | ttcttttttg | 1800 |
| tgaatcaaca | ggagtgagcg | gctcagaacc | ttgcctcctt | tatggcaggt | atactggcca | 1860 |
| gcacctccaa | attctttgac | ttggatggtc | agagttttac | cagaacctag | gacttcactg | 1920 |
| ctctgcgctg | aggtccaagt | gatgtcatct | tcttcagggg | tatggcaggt | gaggaccacc | 1980 |
| atttctccgg | gggcatcagg | gtgccagtc | aactctacaa | cataaacatc | tttctccagt | 2040 |
| tcccatatgg | ccatgagggg | agacgccagc | aaaacgaggg | aaaaccagga | gatgaccaac | 2100 |
| tgctgaggat | gcaccttgct | tctggccagg | ctgcaagggt | ccctgggtct | gaaacggagt | 2160 |
| ctcctgctgc | tgctgctact | gctactggag | cttatatacc | ctactcctac | cgagcttttg | 2220 |
| gatggaaact | taaactagaa | actgacttgt | ccaagttgcc | tcgtgcc | | 2267 |

<210> 110

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Synthetic Linker

<400> 110

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<210> 111
<211> 10
<212> PRT
<213> Felis catus

<400> 111

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| 1 | | | | 5 | | | | | 10 |